

Rock Products and BUILDING MATERIALS

INCORPORATING DEALERS BUILDING MATERIAL RECORD

Volume XVIII

CHICAGO, ILL., JULY 7, 1916

Number 5

CONCRETE CONSTRUCTION IN CITY AND TOWN-

PERMANENT
FIREPROOF
ATTRACTIVE



Concrete for Permanence
USE

SAYLOR'S
PORTLAND CEMENT

COPLAY CEMENT MANUFACTURING CO.
Philadelphia New York Boston Jacksonville, Fla.

Tests and Results

with the Stedman Pulverizer have proven
its great economy

Grinding Sandstone—a difficult problem
for most pulverizers,
is solved with the Stedman Pulverizer.

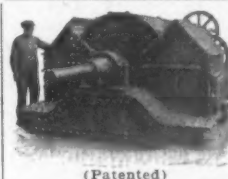
Let us prove its great economy
for your operations

ESTABLISHED 1834

STEDMAN'S FOUNDRY & MACHINE WORKS

(Manufacturers of disintegrators, pulverizers, grinders, mixing machines of all kinds, dump cars, shaker and revolving screens, elevators, conveyors, pulleys and sprocket wheels. Designers of complete crushing, grinding, mixing and screening plants.)

AURORA, INDIANA, U. S. A.



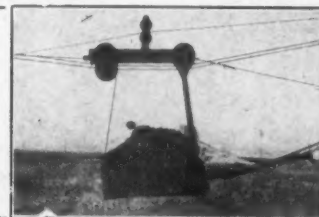
"PENNSYLVANIA"

Hammer Crushers For Crushing and Pulverizing Lime, Limestone, Gypsum, Marl, Shale, Etc.
Main Frame of Steel, "Ball and Socket" self-aligning Bearings; forged Steel Shaft; Steel Wear Liners; Cage adjustable by hand wheel while Crusher is running.
No other hammer Crusher has such a big Safety Factor.

Pennsylvania Crusher Co.
New York PHILADELPHIA Pittsburgh

This Is Our Type "F" Bucket

Write us your condition and requirements and we will advise you if our equipment is adapted to your work
The Cable Excavator Co.
Commercial Trust Building,
PHILADELPHIA, PENNA.



Daily Capacity
9000 Barrels



Quality
Quantity
Service

MORE THAN FIFTEEN YEARS OF SATISFACTION

FOUR PLANTS:

ALPENA, DETROIT, WYANDOTTE and CLEVELAND

HURON and WYANDOTTE

Great Water and Rail Facilities
Best Serve the Entire Middle West

EVERY BARREL TESTED AND GUARANTEED

SOLD BY THE BEST DEALERS

USED BY THE BEST BUILDERS

Main Offices: 1525 Ford Building, Detroit, Mich.

Daily Capacity
9000 Barrels



Quality
Quantity
Service



Beautiful Houses from Illinois to
Massachusetts are Roofed
with Reynolds Flexible
Asphalt Shingles

A multitude of pretentious residences in a score of states are giving ample proof of the long-lasting surface of Reynolds Flexible Asphalt Shingles.

Every type of modern home can be protected and beautified, at lower cost, with these time-

tried, weather-tested shingles. They withstand the ravages of driving rain, pelting hail, hottest sun and heaviest snow without warping, cracking, splitting, curling or blowing off. Sparks cannot set them on fire. Long Exposure cannot dull their rich color. Adaptable to every style of pitched roof, and make possible unusual architectural effects, such as roll edges, thatch effects and rounded corners.

Reynolds Asphalt Shingles

Guaranteed for 10 years—will wear many years longer—
Write for liberal agency proposition.

Rough-surfaced weather defiers made of crushed slate or granite securely embedded in pure Asphalt. Natural colors of garnet, red or gray-green which never fade and never need painting. We are the original makers of flexible asphalt slate shingles and tested them for ten years before putting them on the market. They are uniform in size—8 ins. by 12½ ins.—and are laid 4 ins. to the weather. Easily and quickly laid.

Let us send you a booklet showing photographs of modern houses roofed with Reynolds Asphalt Shingles. Write for a copy TODAY.

H. M. REYNOLDS ASPHALT SHINGLE CO.
Original Manufacturer
Established 1868

Grand Rapids, Mich.
Members of National Builders' Supply Association

WHEELING WALL PLASTER CO.

WHEELING, WEST VIRGINIA



Makers and Wholesalers
of high grade

BUILDING MATERIALS
—and—
ROOFING PRODUCTS

Car Loads and Local Shipments

Our Service Will Please You

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



United States Custom House and Postoffice, Omaha, Neb.
KALLOLITE PLASTER USED

Kallolite Cement Plaster

Was used on the Omaha Post Office, as well as many other

Government and Public Buildings.

Kallolite Cement Plaster is manufactured from the Purest Gypsum Rock found in the United States as shown by last Government Report.

CARDIFF GYPSUM PLASTER CO.

Write for literature.

FT. DODGE, IOWA



About Bakup and Partition Tile—

You ought to handle our 4x5x12 and 5x8x12 BAKUP TILE made from high-grade "Ohio" fire clay. We have a nice stock from which to make prompt shipments.

You can also get PARTITION TILE from us in sizes 3x12x12 up to 12x12x12.

One shipment from us will easily convince you that our material is what you ought to handle.

Write us for prices, etc.

**THE
METROPOLITAN PAVING BRICK COMPANY**
Canton, Ohio

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

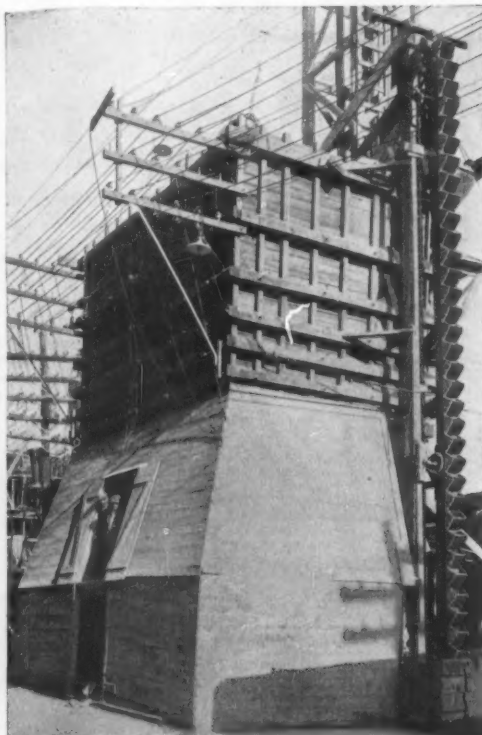
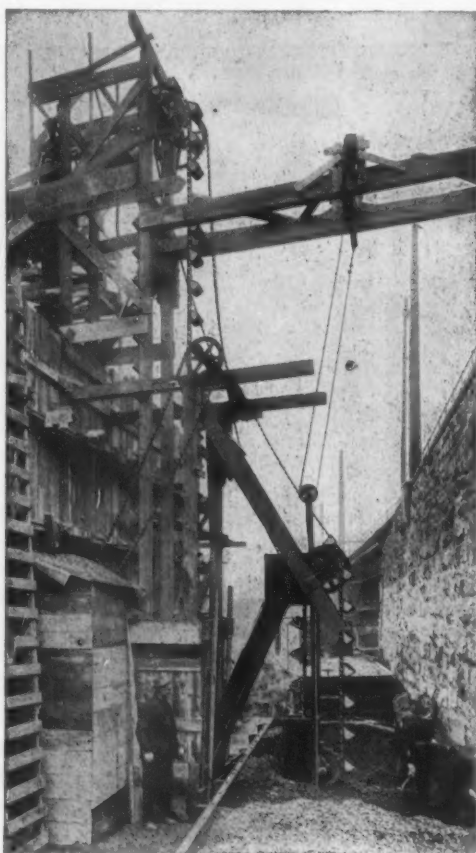


Fig. 7663.
Link-Belt Continuous Bucket Elevator Served by
Wagons



Link-Belt Car Unloader

Link-Belt Equipment for Reducing Costs on Construction Contracts

We design and build machinery for elevating and conveying, installations laid out to meet individual requirements. Built to give continuous and uninterrupted service, to keep materials moving to storage or to the job as rapidly as they can be taken care of by wagons or railroad cars.

Put your problems of handling crushed stone, gravel, sand, slag and other abrasive materials up to Link-Belt Engineers. We have developed a special line of machinery for handling such products.

Fig. 7663 shows a contractor's outfit for loading a concrete mixer bin, consisting of a continuous bucket elevator on one side and a centrifugal bucket elevator on the other side. Handles gravel and sand for the mixer plant of the J. W. Mark Company, used in the construction of a large building for the Baldwin Locomotive Works, Philadelphia.

In several instances such equipments have been used in the construction of four or five large concrete buildings, one set of elevators handling the different contracts with nothing renewed except perhaps the drive sprocket or a few buckets.

We also build complete plants for cleaning and sizing building materials. We are specialists in designing and building Reliable Equipment for contractors' work.

Write for Catalog No. 213

LINK-BELT COMPANY

PHILADELPHIA

CHICAGO

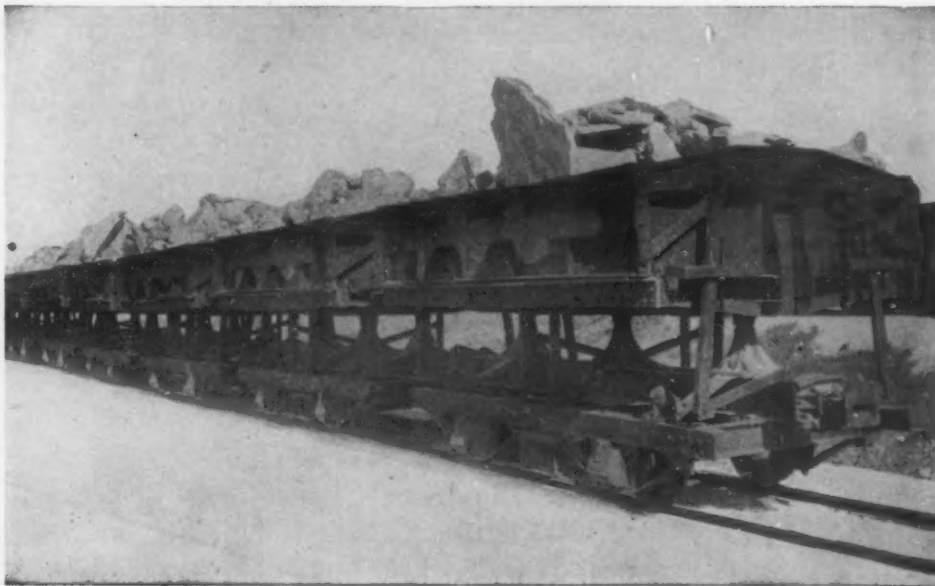
INDIANAPOLIS

New York.....299 Broadway	Cleveland.....1304 Rockefeller Bldg.	Wilkes-Barre...2nd Nat. Bank Bldg.
Pittsburgh.....1501 Park Bldg.	Louisville.....Frederick Wehle, Starks Bldg.	Minneapolis....418 So. Third St.
Boston.....40 Federal St.	Knoxville, Tenn...D. T. Blakey, Empire Bldg.	Seattle.....550 1st Ave., South
St. Louis...Central Natl. Bk. Bldg.	New Orleans...C. O. Hina, Hibernia Bk. Bldg.	Portland, Ore...14th and Lovejoy Sts.
Buffalo.....398 Ellicott Square	Denver...Lindrooth, Shubart & Co., Boston Bldg.	Los Angeles....181 N. Los Angeles St.
Detroit.....732 Dime Bank Bldg.	San Francisco...N. D. Phelps, Sheldon Bldg.	Toronto, Canadian Link-Belt Co., Ltd.

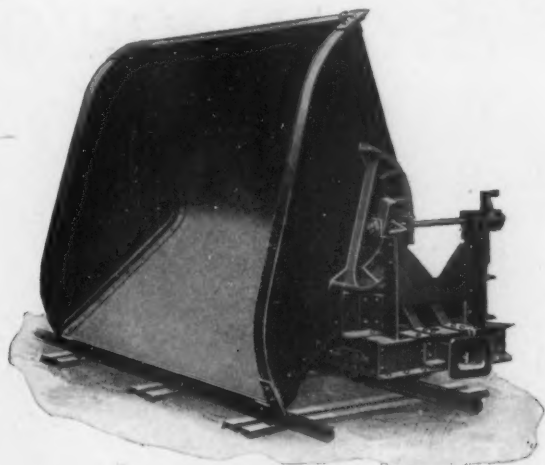
Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

QUARRY CAR SERVICE!

The Kelly Lime and Transport Co., operating three large plants, are using 250 "Lakewood" cars.



Many different types of cars are included—all steel—each designed for a particular purpose. Some are new—of recent designs. Others show the marks of wear—*—yet every one is in regular use.*



Lakewood No. 1688 Rocker Dump Car.
In dumping position.
For locomotive haulage and steam shovel loading. Especially adapted to quarry service

An experience of over 18 years in manufacturing industrial cars, with facilities for handling cars of all types and descriptions, and with expert engineers always ready for consultation, The Lakewood Engineering Company offers to its customers the best possible service for storage and handling propositions.

The Lakewood Engineering Co. CLEVELAND, OHIO

Eastern Selling Agents—Brown & Sites Co., 30 Church Street, New York

PITTSBURGH
1230 Fulton Building

CHICAGO
506 So. Canal Street

KANSAS CITY
909 N. Y. Life Building

PHILADELPHIA
1524 Real Estate Trust Bldg.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



DID YOU EVER FEEL THE NEED OF A LIGHTER, CHEAPER, SIMPLER LOCOMOTIVE CRANE?

mounted on road wheels to run anywhere?

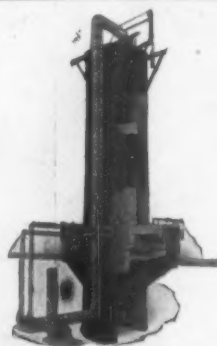
BYERS

AUTO-CRANE

Fills that need. We will tell you all about it.

Chicago Office: 1440 Monadnock Bldg.
Cleveland Office: 601 Sincere Bldg.

The John F. Byers Machine Co.
310 Sycamore St., Ravenna, O.
(HOISTING ENGINES AND DERRICKS)

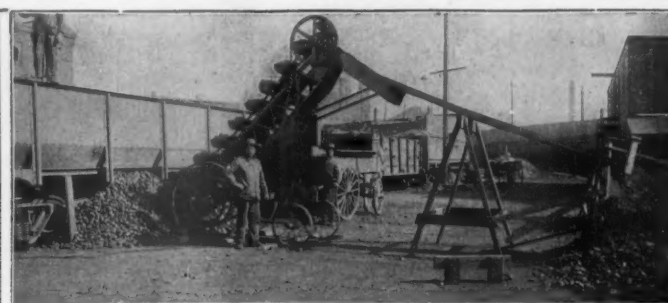


Doherty-Eldred Lime Kilns

Complete Lime
Burning Plants

*Refractory Material
for Linings*

The Improved Equipment Co.
Combustion Engineers 60 Wall St., New York City



(Patented)

Unload Your **"HAISS" DIGGING WAGON LOADER**
Cars with
Trap rock, sand, gravel, coal, coke, etc., can be unloaded from cars or loaded into your trucks at a cost of less than one cent per cubic yard for gasoline or electricity. Capacity one yard per minute.

Write for price and descriptive matter

The George Haiss Mfg. Co., Inc. 140th St. & Elder Ave. New York City

DULL Equipment has taken the "grave" out of gravel

Many good dollars have been buried in gravel pits never to be seen again. Dull screens, sand separators, scrubbers and many other labor-saving, cost-cutting devices are the result of years of experience in this particular field. The use of Dull equipment is assurance of success.

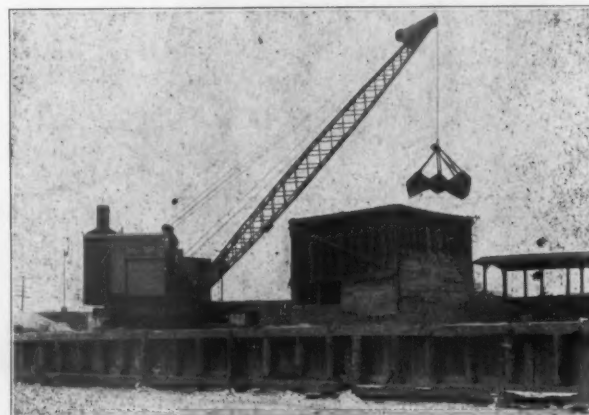


If you contemplate the installation of a plant, let us show you what we have done and what we can do. Our engineering department is at your service.

Catalog "Plants for Washing Sand and Gravel" sent on request.

THE RAYMOND W. DULL COMPANY
1914 Conway Building, Chicago, Illinois

WHY AN "OHIO"



THE Acme Coal & Builders' Supply Co., Toledo, Ohio, F. B. Jones, Gen. Mgr., after having used other makes of cranes decided to get a crane that would better meet their requirements and so we've painted their name on an Ohio.

Ask Jones why he bought an Ohio

90% of the "castings" are basic open hearth steel


Write for Catalogue No. 11

Ohio Locomotive Crane Co., Poplar St., Bucyrus, O.

30 Church St.....New York	Edward R. Bacon Co.....San Francisco
Fisher Bldg.....Chicago	Contractors Equip't Co.....Seattle, Portland
Home Life Bldg.....Washington, D. C.	N. C. Walpole.....Birmingham, Ala.
Oliver Bldg.....Pittsburgh	950 Rockefeller Bldg.....Cleveland, O.
Kelly, Powell, Ltd.....Winnipeg, Montreal	

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

**ERIE
REVOLVING
SHOVEL**



A Shovel today— A Locomotive Crane tomorrow—

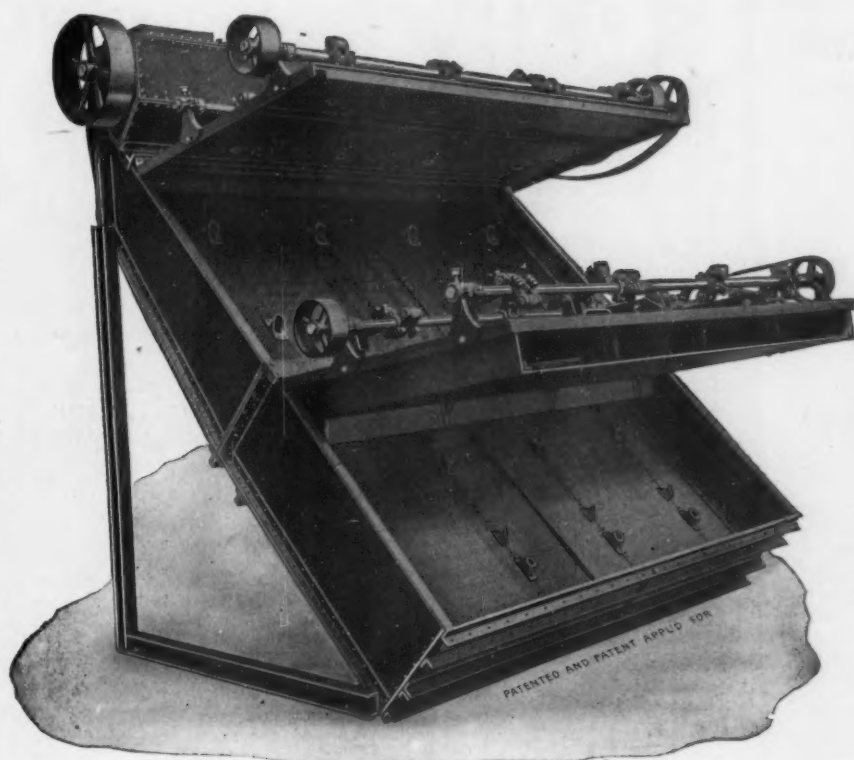
Here's how to get the results and save the cost of a locomotive crane:
The type "B" Erie Shovel when equipped with a 32' locomotive crane type boom, together with worm gear driven, self-locking boom hoist, and an extra drum and gearing for operating the grab bucket, is as efficient as any plain locomotive crane outfit of its size. Every provision is made on every standard Erie Shovel for the reception of this extra equipment. It can be installed quickly by any ordinary mechanic.

This additional equipment costs but a small part of what a special outfit would cost. Handles $\frac{1}{2}$ yd. clam shell or orange peel bucket without counterweights; $\frac{3}{4}$ yd. bucket with counterweights. With 32' boom set at 45° angle, it has a working radius of 27' 6" and a lifting power of 4,500 lbs. set at 60° angle, working radius of 20' and lifting power of 9,600 lbs.

Remember the Erie's the shovel that keeps the wagons busy. It's the best buy on the market today. May we send you details?

Ask for Bulletin R-12

Ball Engine Company - - - Erie, Pa.



STURTEVANT

NEWAYGO GIANT SCREEN

144 SQ. FT. OF SCREEN AREA
LARGEST INCLINED VIBRATING
SCREEN FOR BIG SCREENING UNITS

Screens Everything Screenable
FROM $\frac{1}{4}$ INCH TO 100 MESH

Newaygo Screens are built in many styles and sizes to fit nearly all kinds of materials, conditions and capacities. There are thousands in use.

Newaygo Principle:—

Inclined screen surface—so that coarse mesh produces fine product—large openings do not clog—coarse wire is durable. Wire cloth stretched tight and held taut tapped by hundreds of little hammer blows upon its reinforced surface gives an unequalled vibration without destructive shocks. No eccentrics, no bumping mechanism. Less than 1 H. P. operates the largest. Large capacity; accurate output.

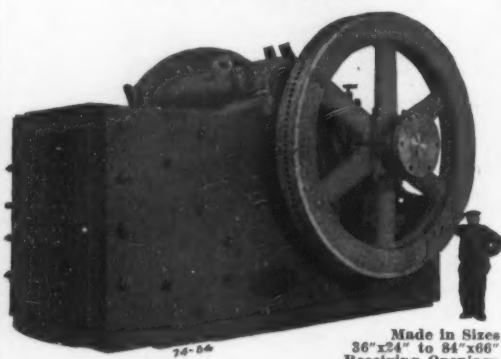
SEND FOR NEW CATALOGUE

More in Use Than All Others Combined
STURTEVANT MILL CO., HARRISON SQUARE, BOSTON, MASS.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

McCully and Superior Crushers are chosen for big, important plants because—

SUPERIOR Jaw Crusher



Made in Sizes
36"x24" to 84"x66"
Receiving Openings

Salient Features

Main shaft supported at the only logical point; that of no gyration.

Hopper may be built into working floor, as it is not disturbed when changing head or resetting concaves.

Positive protection of eccentric from grit and dust. Cannot wear to a loose fit.

Flanged wearing plates.

Self-tightening head.

Removable countershaft bearing.

Bushed bottom plate.

Steel gears.

Automatic Lubrication.

Leaders in the development of Large Crushers, Rolls, Screens, Elevators and Tube Mills.

Write for Catalog PM 4-58

Tangible Facts

An enviable record during five years on trap rock.

A dozen machines of this type giving eminent satisfaction.

The cast-steel construction throughout, spring supported pitman, adjustment for changing product, Manganese steel wearing parts, engine type flywheels, automatic lubrication, water cooled main bearings.

McCULLY Gyratory Crusher



Built in the size to meet your requirement.

WORTHINGTON PUMP AND MACHINERY CORPORATION

Successor to Power & Mining Machinery Co.

New York Office: 115 Broadway

DISTRICT OFFICES: Chicago, El Paso, San Francisco.
W. E. Austin Machinery Co., Atlanta, Ga.

Works: Cudahy, Wis.

M 349.4

The Same Work with Less Power

Cut down your running expenses by using less power. Power costs are high—each H.P. probably costs you between \$70 and \$90 a year. Therefore a pulverizer which gives you the same capacity as other crushers but uses from 5 to 10 horsepower less, saves between \$350 and \$900 a year for you in power costs alone.

The All-Steel

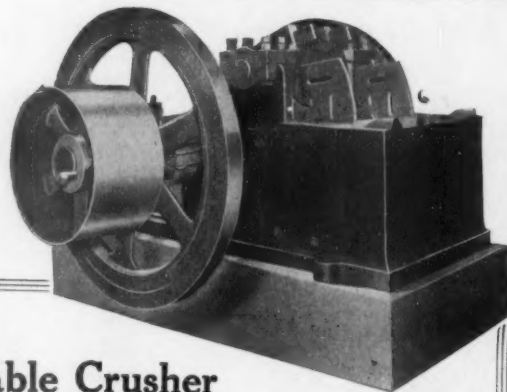
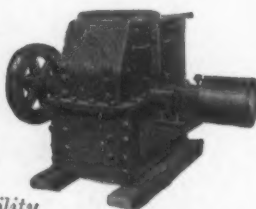
K-B Pulverizer

consumes only 10-15 H. P. to reduce 4-7 tons of stone or 8-13 tons of lime per hour from 3" to dust. The No. 2 K-B Pulverizer consumes only 20-25 H. P. to reduce 10-15 tons of stone or 20-25 tons of lime per hour. You can figure for yourself how much the K-B would save you in power costs.

Or better yet, write to us, sending us a small sample of your material, and we can tell you exactly how many tons of your material the K-B will crush per hour, and just how many H. P. will be required.

K-B PULVERIZER CO., Inc.
86 Worth Street New York City

Built for Service and Durability.



The Durable Crusher

is an important asset in the operation of a quarry. The Crusher that will wear the longest is the one that gives the greatest economy.

A Feature of the

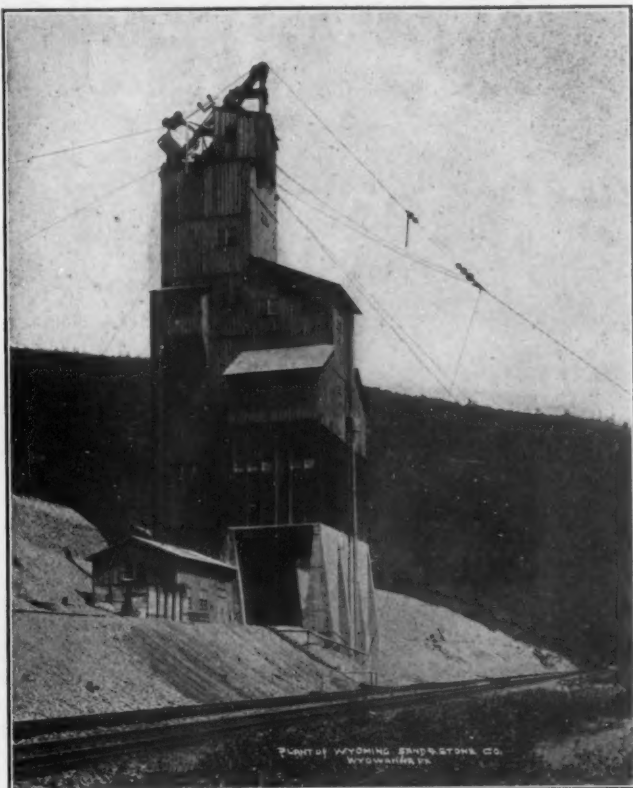
Blake Type Crusher

is the bed which is one solid casting, being the largest and most expensive piece of the machine. To overcome the wear of the bed caused by the hard iron jaw, we have provided a cushion plate with a babbitt lining poured between the cushion plate and the bed. This not only protects the bed, but gives a uniform bearing on the stationary jaw as well, which enables us to use a much harder jaw without the possibility of its breaking. The stationary jaw is held in place by hard chilled iron side plates.

There is but one reason why you should investigate the Blake Type Crusher. Write today for our complete catalog.

Webb City and Carterville Fdy. & Machine Works
Main Office, WEBB CITY, MO.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



Sand Washing Plant installed for the Wyoming Sand and Stone Co.

Gravel Washing Plants

The design of your Sand and Gravel Washing Plant demands the best expert attention. The **Kind** of machinery you install greatly determines whether you are to get successful operation and profit or trouble and loss.

Methods for handling Sand and Gravel are being constantly improved. We have developed machinery for more effective washing and screening and for economy of room, with greater capacity.

Increased Simplicity and Results. Cut down amount of labor required.

Use mechanical settling tanks that produce dryer and cleaner sand and operate without attention to "Automatic" parts.

Let us help figure your problems

The Good Roads Machinery Co., Inc.

Fort Wayne, Indiana

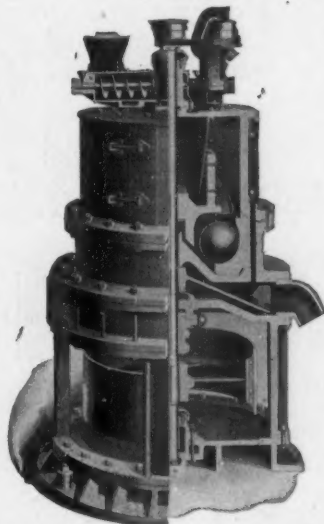
Kennett Square Pa.
Des Moines Iowa
50 Church Street..... New York, N. Y.
79 Milk Street..... Boston, Mass.

Commercial Trust Bldg. Philadelphia, Pa.
609 Oliver Bldg. Pittsburgh, Pa.
1211 W. Main St. Louisville, Ky.
Tenn. Trust Bldg. Memphis, Tenn.
38 Madison Ave. Atlanta, Ga.

The Fuller-Lehigh Pulverizer Mill

A Complete Self-Contained Unit

The most economical mill for producing
Agricultural Limestone



Reduces lump rock to
20, 40, 60, 80, 100,
or 200 mesh.

Requires no outside ac-
cessory equipment.

Requires no overhead
shafts, drives or
screens.

All material discharged
from mill is finished
product.

No inside journals or
bearings.

No inside lubrication.

Uniform feeding sys-
tem.

Constant and free dis-
charge.

Low installation cost.

Low operating cost.

Low lubricating cost.

Dustless operation.

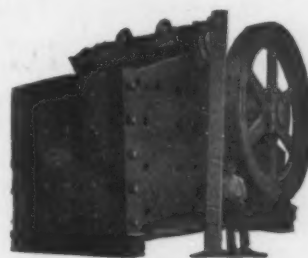
Built in sizes to meet the requirements of your trade. Grinds rock to meet the specifications of all Agricultural Experiment Stations.

SEND FOR CATALOG NO. 70

Lehigh Car, Wheel & Axle Works

Main Office and Works:

Catasauqua, Penna.



"Economy in Operation Puts Dollars in Your Pockets"

Traylor Jaw Crushers with Water Cooled Cast Steel Pitman of greatest tensile strength, Water Cooled Main Bearings, perfect Oiling System, Chrome Steel Toggle Blocks and Manganese Steel Jaw Plates, combined with extra heavy Cast Steel Main Frames. Are **economical**, and made in sizes from 7x10 in. up to 66x86 in. Jaw Opening.

Bulletin J-1.

Traylor Engineering & Mfg. Co.

Main Office and Works
Allentown, Pa.

New York Office
24 Church St.

Western Office
Salt Lake City

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

Anywhere in U. S. A.



Hydrated Lime

Freight is no bar to the sale of any product providing it has the quality.

Tiger Brand White Rock Finish

Hydrated Lime

can be shipped and sold at a profit to any point in U. S. A. besides many foreign countries.

Wherever architects and contractors demand plastering material that will not pit, pop, or blister in the white coat,—there you will find Tiger Brand.

The Kelley Island Lime & Transport Co.
CLEVELAND, OHIO

Phelan & Sullivan Haul Gravel at a Cost of 5c Per Cubic Yard with Plymouth Locomotives

Phelan & Sullivan, contractors of Syracuse, N. Y., built the Syracuse-Bridgeport state highway.

There was a haul of gravel from pits to point of use of $2\frac{1}{2}$ miles—and the haulage problem was liable to knock profits sky-high. But Phelan & Sullivan solved the problem and hauled their gravel at a cost of 5c per cubic yard, which was cheaper than steam or horses ever did.



From a Photo

Here Is What Phelan & Sullivan Say:

"The machines make ten trips each day with $9\frac{1}{2}$ -yard cars, making a total of 270 cubic yards of gravel per day," writes Mr. L. D. Sullivan. "The cost of operation is \$13.50 for labor, gasoline and oil, which is, approximately, 5c per cubic yard."

Plymouth Locomotives Do Wonders in All Sorts of Duties

On construction work—in road building—in mines—in gravel pits—in brickyards—and wherever haulage between two fixed points is a problem, Plymouth Locomotives are working low-cost miracles every day.

Read Phelan & Sullivan's Story—
It's FREE to you

We have a little folder that gives the record of the two "Plymouths" on this highway job and anyone who has a haulage problem ought to read this interesting little story. A copy will be sent free for the asking.



THE J. D. FATE CO. 210 RIGGS AVENUE
Plymouth, Ohio

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

prepared?



The spring drive is on.

Will the first engagement with spring business leave your cement warehouse empty?

Will the long summer campaign find you lacking the ammunition you require for insuring a successful season?

Lehigh service will get your cement to you when you need it.

Lehigh advertising will carry the campaign of permanent concrete construction successfully into the trenches of your prospects.

Be Prepared.

LEHIGH PORTLAND CEMENT CO.



CONCRETE FOR PERMANENCE

MILLS:

Ormdrod, Pa.; West Coplay, Pa.; Foglesville, Pa.; New Castle, Pa.; Mitchell, Ind.; Mason City, Ia.; Metairie Falls, Wash.

OFFICES:

Allentown, Chicago, Spokane, New York City, Philadelphia, Boston, Minneapolis, Jacksonville, Mason City, New Castle, Buffalo, Pittsburgh.

12 Mills—Annual Capacity Over 12,000,000 Barrels

JUL 14 1916 983635720

Rock Products and BUILDING MATERIALS

INCORPORATING DEALERS BUILDING MATERIAL RECORD

Volume XVIII

CHICAGO, JULY 7, 1916.

Number 5

PUBLISHED SEMI-MONTHLY.

DEVOTED TO

Quarry Products, Cement, Lime, Plaster, Sand and Gravel, Clay Products and Building Specialties—Fireproof Building and Road Construction.

THE FRANCIS PUBLISHING COMPANY.

EDGAR H. DEFEBAGH, Prest.

Seventh Floor, Ellsworth Bldg., 537 So. Dearborn St., Chicago, Ill., U. S. A.
Telephone: Harrison 8086, 8087 and 8088.

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H. F. AKE, Secretary.

DRUSUS H. NICHOLS, Advertising Manager.

Communications on subjects of interest to any branch of the industry are solicited and will be paid for if available.

Every reader is invited to make the office of Rock Products and Building Materials his headquarters while in Chicago.

Editorial and advertising copy should reach this office at least five days preceding publication date.

TERMS OF ANNUAL SUBSCRIPTION.

In the United States and Possessions.....\$1.00

In all other Countries in the Postal Union.....\$1.50

Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.

Advertising rates furnished on application.

Published on the 7th and 22nd of each month.

Entered as second-class matter July 2nd, 1907, at the Postoffice at Chicago, Illinois,

under act of March 3rd, 1879.

Copyright, 1915 by E. H. Defebagh.

Dealers who stocked up early are now gathering in the grapes. Work that has been held up for many months now proceeds without hesitation.

Yes, the farmers report another big crop, and nobody has observed that there is anything the matter with prices for farm products anywhere. It is to be observed that these same crop reports indicate general prosperity.

Portland cement mills are not running full on account of short help, and the demand is steady to take up about all of the actual production. The price is firmly held at levels in line with advanced costs of manufacture, if anything a little below the line.

The demand for agricultural lime not only exceeds previous records, it has passed all expectations. It is supposed that the general prevalence of rain during the late spring and early summer made the farmers realize the importance of having their land tuned up for service as soon as things began to grow.

Road contractors have taken the hint or else been overtaken by necessity to equip with auto trucks and mechanical apparatus to handle road materials. In spite of the fact that all motor truck builders have been forced to help out the army to a great extent with an unexpected demand for trucks, the road contractors have managed to get quite a few.

Building labor was never so highly paid and of such a poor quality as that ruling this day and date. In the quarries and mills

it is a problem to keep enough help to keep running. The present troop movements have not yet been felt in this direction, because the individuals are not available for military service, but continued and heavy recruiting will reach them if it keeps up.

The railroads are working a public sympathy campaign to get the public to contribute further to their mismanagement. The roads are paying out entirely too much money in interest upon securities that never stood for any actual investment either in material or ability. They want to keep on squandering millions upon depots and terminals that are not useful, but only ornamental. The public only wants to pay for enough comfort to get promptly and safely away from a train when it arrives, and a place to take the train about three minutes before leaving time. There is no function provided in the charter of any railroad company that indicates they are charged with building palaces to decorate terminal cities. Unless the railroads have more money than they know what to do with there is no reason for them to astonish the world with their misplaced magnificence. It does not take a particularly bright man to see just what is the nature of the malady that affects railroad managements. They are troubled with monopolistic. Having succeeded in getting their taxation hook into every citizen's pocket without complaint, they now do not hesitate to demand trousers and all. Everybody knows that the railroads have been looted and milked to a standstill; also, that the same system is still in progress. It is but natural that all the employees should get the habit. Look at the example set by their superiors. Radical reform must come so that people can see it plainly before they are willing to be taxed any further.

Probably there is no other merchandising business in which the cost of service amounts to so much in comparison with the value of the goods handled comparable to the builders' supply line. The commodities are both bulky and very heavy. A comparison of tons and dollars with the items in other lines is most astounding. The value of a ton in department store deliveries is said to average \$550; the retail grocer \$85, and that is considered a great burden comparatively. But look at the supply man with his all-around average of \$2.70 per ton. When the department store delivers a ton upon a ten per cent margin there is \$55.00, or the grocer has \$8.50. But the dealer in supplies only has twenty-seven cents, and that is not enough with which to catch one's breath. It is easy to see that the principal thing that any dealer has to sell is service, and if he don't get paid for that he remains unpaid, for the swapping of the dollars and the billing of the tonnage in and out don't spell very much. It is up to the dealers to learn how to keep and collect the items of cost so that total cost plus a profit can be intelligently charged. Charges for service have got to be systematic, and there is no other way, except by diligently keeping the cost, to arrive at a system that will go and keep customers satisfied. You can't charge customers upon a hit-or-miss basis without being suspected of irregularity. Get down to the modern way of doing business by learning to keep costs correctly, and charge fairly for the service you sell with your goods, and you will soon be recognized as an up-to-date business man. There is no other way. If you don't do it some other man will, and he will get the trade.

WITH YOU and ME

The Revere Rubber Co., main office at Chelsea, Mass., has opened up a publicity department at 1790 Broadway, New York City, where all matters of publicity will be handled.

Alsen's American Portland Cement Works announce the resignation of Vice President R. S. Sinclair and the appointment of William P. Corbett as first vice president and J. W. Kittrell as general manager.

On June 15, Harold F. Sullivan, of the Sullivan McDermott Lumber Co., of Tecumseh, Neb., and Miss Anna Murphy, of Omaha, were married at Sacred Heart Cathedral at Omaha. After a trip East they will be at home in Tecumseh.

J. T. Roberts, manager of the Stockton Fire & Enamel Brick Co., of Stockton and San Francisco, Cal., is in the East on business connected with the improvements now under way at the plant.

J. E. Doyle, of Castle & Doyle, Madison, Wis., retailers, is enjoying a visit to California with Mrs. Doyle and a party of friends. They left Madison on June 10 and expect to be away for a period of five weeks.

P. L. Huckle, general manager of the Ste. Genevieve Lime Co., St. Louis, Mo., and also general manager of the Kolb Coal Co., recently secured a contract for \$500,000 worth of coal from the Terminal Railroad Association of that city.

Thirty of the principal exhibits now in the Building Material Exhibit in the Metropolitan building at Los Angeles were on July 1 transferred to a permanent building display on State street, Santa Barbara, Cal.

The Good Roads Machinery Co., Inc., of Fort Wayne, Ind., is now prepared to design, build and install gravel-washing plants of any capacity that may be desired. This is in addition to a line of crushers sold by this concern.

The Pratt Building Material Co., of San Francisco, Cal., has moved its offices from the second floor of the Examiner building to the sixth floor of the same building. The company reports an active business in shipping sand and gravel from its pits near Marysville, Cal.

John F. Pollock of the Ash Grove Lime & Portland Cement Co., Kansas City, Mo., returned from a trip through the southwest recently to report that from the looks of things there will not be much doing in the cement line in the rural districts this year. However, this does not apply to the city trade.

The Kansas City office of the Association of American Portland Cement Manufacturers has been moved from the ninth floor of the Commerce to 1007 on the floor above. The increase in business demanded more office space, and two new men will be added to the office force.

E. J. Hernan, assistant director general of the National Highway Association, has completed a several weeks campaign in Texas. He says that rapid progress is being made in the construction of

the various links in the Texarkana-to-Laredo highway and he predicts that this road will be an accomplished fact within the next twelve months. In Lamar county a bond issue of \$1,000,000 is soon to be voted on and the good roads movement in other counties along the route of the trunk highway is receiving much attention.

George W. Warren, president of the Warrenton Clay Products Co., of Astoria, Ore., and George Chew, a director of the same company, have returned to Astoria after a tour of the eastern clay manufacturing and machinery towns. They report having secured a large amount of machinery for use at the new plant, work on which will begin in a short time.

Morris Knowles, one of the best known engineers on big projects in western Pennsylvania and who has been connected with some of the most important engineering feats in this part of the country, has incorporated his business as Morris Knowles, Inc. His associates in the new firm will be John M. Rice and Maurice R. Scharff of this city.

A. L. Frank, advertising manager of the Dewey Portland Cement Co., and P. B. Naylor, extension man of the Iola Portland Cement Co., attended the course in "Concrete for Manual Training and Vocational Features" at Chicago, from June 26 to July 1. Mrs. Frank accompanied her husband and spent the time visiting relatives in and near Chicago.

The General Roofing Co.'s Cincinnati branch will hereafter be located at 116 West Third street, quarters there having been leased by Manager Shaw for a period of two years. The company has for some time maintained an office in the Union Central building, but the need for warehouse quarters resulted in its securing the Third street building.

An interesting trip to the Harahan bridge to view the last processes of erection was made a few days ago by the members of the Engineers' Club of Memphis, Tenn., in a body. Besides inspecting the work they saw the placing in position of the top chords of the last of the heavy steel. They were much pleased with the rapidity with which the work of construction has been carried on the last few months. The bridge will be open for freight and passenger traffic about Aug. 1.

The Pursell-Grand Co. is proud to have a part in the contribution of Cincinnati to Uncle Sam's preparedness for real trouble, Edgar Garlick, one of that company's sales force, being a member of Troop C, Cincinnati's crack cavalry organization. As cavalry would be the arm of the service worst needed in case of trouble with Mexico, Troop C was one of the first National Guard organizations in Ohio to be called out, and Mr. Garlick has since been with the troop, awaiting whatever may come.

F. A. Peckham & Co. announce that they have opened an office in the Leader-News building, Cleveland, Ohio, and that in addition to their regular line of selling contractors with locomotive cranes, steam shovels, making a specialty of revolving shovels, locomotives, cars, etc., they have added a line of motor trucks, and will make a specialty of a machine, especially designed and

built for the contractors' trade, announcement of which will be made in the near future. Fred Peckham will give his personal attention to the management of this office for the next few months. For the past fifteen years he has been in the heavy equipment business.

John Schmoll, president of the St. Louis Lime & Cement Co., St. Louis, Mo., has been made chairman of the Republican city commission. Mr. Schmoll has considerable financial interest, being president of the Tower Grove bank and a director in the American Co.

The annual outing of the Cincinnati Builders' and Traders' Exchange took place on June 27, being held on the Ohio river. The steamer "Majestic" was chartered for the day, and several hundred of the members and their friends enjoyed the occasion. Plenty of good things were carried along for consumption, and an entertaining program of amusements was laid out by the committee in charge, headed by Harold McDermott. Many material men were among those in attendance, especially in view of the fact that the Cincinnati Brick Club, which gave to its friends in the trade last year a very successful outing, recently decided not to hold a separate outing this year, but to join in the Exchange affair.

LANE TO MAKE MID-YEAR REPORT.

Secretary Franklin K. Lane has received from the Geological Survey its mid-year review of mineral production. This official statement covers the first six months of 1916 and includes reports from the Federal specialists on the principal products of the mining industry, as well as from the western offices of the Geological Survey. These summary reports are being made public as authoritative and impartial records of business conditions.

"The mid-year review was so well received last July," said Secretary Lane, "that I believe it met a public need, and it will, therefore, be continued as one of the services rendered to the public by the Interior Department. The business of the whole country has become so interdependent that facts regarding our mines and mills and furnaces are of real concern to every citizen interested in any industrial undertaking. That the mining industry is making many new records in the extent and success of its business must be taken as an index of the nation's general prosperity. Best of all, 1916 is registering another advance in the growing independence of the United States as a producer of the many materials that civilization has made necessary. Our country is coming into its own."

AD MEN MEET IN BIG NUMBERS.

At the annual meeting of the Associated Advertising Clubs of the World, held in Philadelphia, on June 26-29, there were said to be registered 10,000 or more delegates. In addition to the hundreds of addresses and papers presenting suggestions, information, experiences and knowledge of incalculable value to the business men of the country, there was staged a great advertising pageant similar to the one held in Chicago last year. Broad street was the scene of this event which was paraded by

numberless men and women and hundreds of artistically designed and decorated floats.

In a message to business men President Herbert S. Houston presented a number of ideas for serious consideration in the conduct of business. He said in part:

"The holding of old markets, the gaining of new ones—always on the basis of our motto—'Truth'—that is the mission of the Associated Advertising Clubs of the World. Now, markets are in human minds. It has been demonstrated that the most direct, efficient and economical way to reach human minds is through the power of advertising. That fact explains our name. But the clubs are concerned with every side and phase of selling and merchandising. We are striving to stabilize and standardize the methods of distribution on truth and efficiency."

The association was addressed by President Wilson, Edward N. Hurley of the Federal Trade Commission, and many other distinguished men in the political and business arenas.

PITTSBURGH EXCHANGE HOLDS PICNIC.

The Pittsburgh Builders' Exchange held their annual outing and picnic at "The Pines" on Perrysville road on Thursday, June 29. The day was ideal, and the crowd began to arrive by auto and street car at 2:00 o'clock.

At 3:00 o'clock the ball game between the Builders' and Builders' Supply Dealers was started. John L. Richmond was captain of the Builders and Hugh F. McKnight was captain of the Supply Dealers. The game was won, featured by some hard hitting by the Builders, and resulted in a victory for the Builders by a score of 15 to 4. Lawrence Ley and John Richmond of the Builders each made a home run.

After the ball game the tug-of-war was the feature and resulted in a victory for the Builders. The Builders' Supply Dealers, however, were not satisfied with the first pull and the second pull was also won by the Builders.

After the tug-of-war, the races were run and resulted as follows: 100-yard dash, free for all, was won by John Harris, of the firm of Knox, Strouss & Bragdon, builders' supply dealers, prize, pen knife; 50-yard dash for ladies was won by Miss Carmen Johnson, of the James L. Stuart Co., prize, silk hose; three-legged race for men was won by Chester Wigley and August Schneider, of the A. Richmond & Sons Co., master builders, prizes, neckties for each man; the egg-and-spoon race for ladies was won by Miss Harriet Pitcairn, daughter of James R. Pitcairn, prize, handkerchiefs; fat men's race was won by W. J. Cassidy, prize, silk hose; ladies' backward walking race was won by Miss Harriet Pitcairn, prize, fancy hairpin; sack race was won by P. A. Drummond, of the Cutler Hammer Co., prize, box of tobies.

After the races, a very delicious supper was served in the spacious dining room at "The Pines" and consisted of fruit cocktail, fried chicken, waffles and maple syrup, mashed potatoes, green peas, salad, ice cream and coffee.

At 9:00 o'clock a very elaborate display of fire works was shot off, and from that time until 11:00 o'clock the guests indulged in dancing.

Altogether the picnic was one of the most enjoyable entertainments ever held by the Exchange, according to Secretary E. M. Tate. A very large crowd was present and was admirably handled by the committee, the live wires of which made it their business to see that every guest had a good time. Besides the amusements as outlined above, a number of the guests pitched quoits, others played cards and some of them rambled over the large grounds which were in connection with "The Pines." Lemonade and buttermilk were served to all those who cared to indulge and tobies were furnished to the men and candy to the ladies. Besides this, every lady received a box of choice candy

and every gentleman a good cigar at the close of the dinner.

The committee in charge divided the work. W. E. Goldman, chairman, took charge of the arrangements for serving the dinner. A. C. Kahn looked after the refreshments on the grounds. H. B. Lauderdale had charge of the music. P. A. Kinley arranged for the fireworks display and H. H. Gilmore had charge of the ball game and the races.

A. S. T. M. at Atlantic City.

The nineteenth annual meeting of the American Society for Testing Materials was held at Atlantic City, June 27-30. The headquarters, as usual, were at the Traymore hotel. The printed registration discloses that 500 members were present and participating in the proceedings. There were 130 ladies present to grace the occasion, being for the most part wives and daughters of the delegates.

Professor Marburg, assisted by his very able and courteous clerical staff, had perfected every arrangement in such detail that the very big meeting of scientists seemed to proceed from volition like a perfectly balanced machine. Without apparent effort the functions of the various committees worked along to the completion of their labors, and still there seemed to be plenty of time for recreation and the enjoyment of the social features.

President Mansfield Merriman, in his annual address, gave a brief history of the society from its beginning as the American section of the International Association for Testing Materials to the formation of the present society nineteen years ago with a little more practical mission than the parent organization, although still associated with and co-operating with that body. He mentioned the fact that the work of the International association is now in a condition of complete suspense owing to the European war. He then sketched the work and achievements of the society by its committees, and the harmonious fabric for its government that has grown up under exceptional management.

"In conclusion it may be said that every member of this society should feel highly gratified at the results of the work of its technical committees," said President Merriman. "Numerous tests, discussions and reports have brought to them new light on the problems of the mechanics and strength of materials, while the practice of manufacturers has been studied in order that costs of production may be lessened and better materials be delivered to consumers. The work of our committees has been done efficiently and economically. As a result standards have been adopted which have brought the interests of producers and consumers in this country into harmony, which have become favorably known abroad, and which, as time rolls on, will undoubtedly be of great benefit to the industrial interests of the United States."

J. Madison Porter was chairman of the entertainment committee, ably assisted by Edw. D. Boyer, chieftain of the golf division. There was a medal play handicap on Wednesday afternoon. Boyer kept the score and declared there was some good marks made. Kelly, Hardy, Larned, Griffith and some more of the cementers were in the running. Beck, who is a member of Chicago's millionaire battery, was off on furlough from the Springfield recruiting camp and arrived too late to compete for the medal, but played anyhow, as did Professor Hatt, who declared they have a better course down at Purdue. Nobody knows yet what became of the medal, unless Boyer carried it off himself. When last seen he was talking to Logan Waller Page about the score.

There was a smoker on Thursday evening in the convention hall which proved to be the usual popular success. Fish house punch, like it comes only from Philadelphia with a snap to it, loosened up the talk traps in fine shape. R. E. Griffith is suspected of this number, but as he was called away

by reason of a telephone message, in all probability Brother Aiken carried out the program. There were anchovies from Norway just the same as if there were no hostile fleets in those northern seas, and other things that even Bates would be unable to analyze of Bleininger describe. Anyhow, Bill Kinney was ready to sing and Dr. Purdy was crowned with a cap of many colors because his color scheme throughout the meeting was wonderful, including a magenta parasol that made Will P. Blair jealous and envious. The smoker was a success because there were very many doing much smoking as well as talking.

Card games were provided for the amusement of the ladies, with favors and prizes, but the charm of perfect weather and the lure of the boardwalk along the sea is always the chief attraction of Atlantic City. It was enjoyed without measure in informal parties by the delegates.

The meetings of the American Society for Testing Materials is really a very hard-working occasion. Probably no other organization has so much hard labor and long technical sessions, so that the intervals given to recreation are needed and cordially appreciated.

General W. H. Bixby, retired, late chief of engineers, United States Army, was elected president of the society and Professor Edgar Marburg of Pennsylvania University re-elected secretary-treasurer.

Thomas Nolan of Philadelphia, representing the committee of the American Institute of Architects in charge of the investigation of the materials of construction, took part in the meeting, taking special interest in the sessions devoted to cement, concrete and other plastic materials largely used in all types of construction.

Matters relating to the various topical departments of this journal are reported under their respective heads.

BOSTWICK COMPLETES TWENTY-FIVE YEARS.

The Bostwick Steel Lath Co., Niles, Ohio, completed a quarter of a century of steady and consistent growth on Wednesday, June 21, and at a meeting of the directors W. H. Hurlbert, Sr., was honored and paid a tribute for the part he has taken as head of the concern since its establishment.

The meeting was held in the offices of the company and accomplished among other things the re-election of the following officers and directors: W. G. Hurlbert, of Warren, president and treasurer; John P. Hazlett of Youngstown, vice president; C. P. Wilson of Niles, secretary; W. G. Hurlbert, Jr., of Warren, assistant secretary and treasurer; J. W. Bowman of Pittsburgh, and Joseph Smith, of Niles.

A report of a very successful year was read by the secretary and the regular yearly dividend declared. The summary of twenty-five years of business success was an interesting feature ending in the directors honoring Mr. Hurlbert by presenting him with a fine parlor lamp as a token of their esteem.

The Bostwick company is known all over the country on account of its long existence and the excellent quality of its product. It is located along the Erie tracks at Niles north of Heaton avenue and covers in all seven acres. The products of the company are steel lath and allied steel building materials.

NEW MILWAUKEE WAREHOUSE.

J. F. Kies & Son, building materials, with offices located at 720-721 Merchants & Manufacturers' Bank building, Milwaukee, Wis., have established a large warehouse and yards at Lloyd and Thirty-first streets. The additional facilities will allow for a greater variety as well as quantity of tile stocks, and will avoid annoyance and loss due to slow deliveries.

The RETAILER

Credit Efficiency.

A folder, pertaining to uniform credits as applied by the building material interests, has recently been distributed to dealers and contractors in the territory of Wheeling, W. Va., by the Wheeling Wall Plaster Co., with gratifying success, according to R. W. Marshall, president of the company. "It is simply wonderful how the dealers are falling in line throughout our territory," he says.

Believing that retailers everywhere will benefit from a uniform credit system, and inasmuch as there is no such system in existence today, Mr. Marshall has attached the name, "National Uniform Credit System," to a statement of facts, and offers it to the industry. He suggests that printed copies be made and sent to the trade.

The article on "Credit Efficiency" follows:

UNIFORM CREDITS AS APPLIED BY

THE BUILDING MATERIAL INTERESTS.

Without argument it must be acknowledged that credit is the most valuable asset one may possess; but there are underlying principles that govern the granting of credit and the terms of sale. Nowhere, perhaps, is this truth more apparent than in the contracting and building material business.

A uniform credit system of thirty days has been adopted by all manufacturers of the different kinds of building material, which is granted to all dealers who by their mercantile rating and manner of doing business are entitled to credit; and without exception the thirty-day terms must be respected. The manufacturers will not ship materials to the dealer who does not comply with these terms.

By this new order of conditions started by the manufacturers, the distributor or dealer must, of necessity, adopt the same terms in selling to his trade; and the retail dealer or contractor must do likewise with his customers.

Profits are based on thirty-day terms, and the dealer must collect in thirty days or both his capital and profits will be entirely wiped out. As an illustration: Suppose a dealer had \$10,000 working capital and he did a \$10,000 monthly business. He positively has to pay the manufacturer in thirty days; and if his customers do not pay until sixty days, the dealer's entire capital would be exhausted and nothing left on which to carry on his business.

It is therefore essential and necessary that the dealer collect from all of his customers in thirty days, and that the contractor insist upon getting his estimates promptly. If the contractor signs a contract in which the estimate periods are not properly provided for, he will then have to look to his bank for financial aid. The manufacturer, distributor, or dealer can no longer be the banker for their customers—the banks being the proper refuge when financial aid is necessary.

When an account is due and the customer finds his bank account exhausted (because of his failure to collect accounts due HIM) he will then be required to give the dealer a note for thirty days with interest at six per cent per annum, just as the dealer is obliged to do with his manufacturer.

Only by strict adherence to this arrangement whereby money can be turned over in about thirty days can close prices be made by the manufacturer, and in turn by the distributor and dealer to their customers.

This uniform credit system earnestly carried out by everyone connected with the building business between the manufacturer, distributor, dealer, contractor, architect and owner cannot help but work out to the mutual good of all.

NATIONAL UNIFORM CREDIT SYSTEM.

CREED FOR BUILDING MATERIAL DEALERS.

Inspired by an advertisement written by R. B. Wrigley, Haydon S. Gaines, field secretary of the National Builders' Supply Association, has composed what he believes will be an ideal creed for building material dealers. He offers it as a suggestion to the retailers of the country and believes that if printed and framed would make an ideal adornment for the walls of retailers' offices.

Mr. Gaines has given his composition the title, "My Creed." It reads as follows:

My Creed.

I am a member of the National Builders' Supply Association, Incorporated.

I am efficient and don't believe in waste.

I haven't any time to fool away on puttering, incompetence or fishy-eyed indifference.

I won't have any deadheads, drones or dubs in my establishment.

I won't have anyone around me who is too proud to work.

I will make deliveries as promised if I have to drive the truck myself.

I have an organization for men who want service, not rainbow promises, or sugar-coated fiction.

I don't claim to be an expert on highbrow art, the ancient history of Madagascar or the summer rainfall in Mars, but when it comes to building materials I know the game forwards, backwards and sideways.

I make my word as good as my bond.

—and beside all of that I am a regular fellow.

GETTING NEARER CASH BASIS.

The retailing of merchandise is getting nearer to a cash basis than it has ever been before. It is a noticeable fact that extensive credits are practically a thing of the past and today are being granted only in cases where years of acquaintanceship have placed a sentimental barrier in the way of demanding that business be done on a twentieth century basis.

The retailers of building materials realize that credit granting should be on a much more restricted basis and are welcoming the change which will soon give them a more prompt payment for materials than has been experienced in the past. This desirable condition of affairs can be speedily brought about if the extravagance practiced by retail dealers in the granting of credits will be eliminated and concessions made only to such individuals or firms as will be in a position to meet their obligations when due.

LABOR TROUBLES INTERFERE WITH SALES.

Builders' supply men of Pittsburgh, have been keenly disappointed many times this spring in sales and deliveries of supplies, owing to the constant trouble which the contractors have had with organized labor. The most aggravating instance of

this kind was the holding up of all work on the Schenley high school building because of the strike which has been in force from Feb. 23, 1916, until a few days ago. The conflicting claims of jurisdiction over the work, involving less than \$300 in value, were between the steamfitters and the sheet metal workers. The board of public education finally became so exasperated that it ran a quarter-page display ad in the Pittsburgh papers headed "An Appeal to the Public."

STRUGGLE FOR HENRY COWELL NAME.

The first steps in the attempt of C. B. Blessing and others, who, so far as can be learned, are not in any way connected with the lime or cement business, to appropriate the exact name and title of the Henry Cowell Lime & Cement Co., San Francisco, one of the oldest and wealthiest producers of lime and cement on the Pacific coast, was told in the May 22 issue of ROCK PRODUCTS AND BUILDING MATERIALS. The opportunity for this move on the part of Mr. Blessing and his associates came in the fact that the original Henry Cowell Lime & Cement Co. has, according to the California law, forfeited its corporate charter by neglecting to pay its corporation tax for last year, the constitutionality of the law not having yet been tested in the courts of California or the United States.

The second move in the game being played by Mr. Blessing was made last week when his newly incorporated Henry Cowell Lime & Cement Co. brought suit against the old company in the Superior court of San Francisco to enjoin the latter from using the name which it has used for a quarter of a century. The complaint recites that on March 4 last the original company forfeited to the state of California its corporate license, thereby losing all right to the use of the corporate name, that two months later the new company was incorporated by Mr. Blessing and that the public is now likely to be deceived if the old company continues to do business under the old name.

The directors of the old company, who are accused of using a name tending to deceive are: S. H. Cowell, Isabelle Cowell, Helen Cowell, son and sisters of the late Henry Cowell, and W. H. George, secretary and manager.

RETAIL FIRM ENTERS SOCIAL WORLD.

An unusual social event in the town life of Ada, Okla., was recently put on by the Dascomb-Daniels Lumber Co., when C. E. Cunning, local manager, assisted by F. N. Daniels, general manager, of the company, was host at an elaborate "at home."

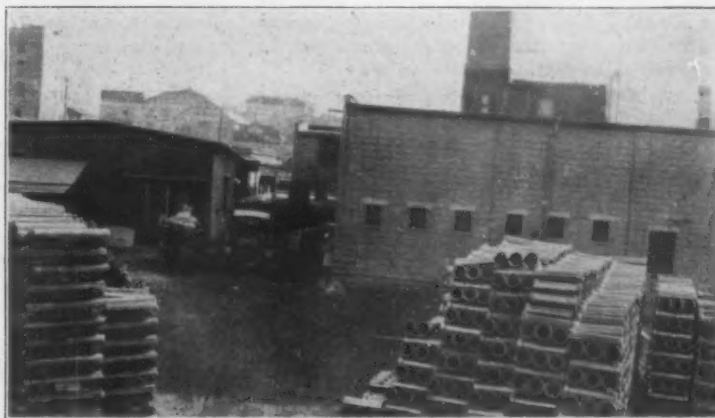
The event was extensively advertised, invitations having been sent out to town and rural folks, and on the morning of May 16, there was a good sized gathering at the yard. Carnations and punch were served all guests.

The purpose of the function was primarily to advertise good homes. Photographs of residences of various sizes were displayed upon the walls and albums showing complete sets of plans, together with pictures of homes built from those plans, were placed in convenient places about the room.

It was a great success and attracted a larger crowd than the spring openings held by the local merchants.



FRONT VIEW OF W. H. PIPKORN CO.'S PLANT. FROM LEFT TO RIGHT ARE OFFICE, WAREHOUSES AND STORAGE YARD.



REAR END OF PLANT SHOWING DRIVEWAY, STABLES, WAREHOUSES AND SPACE AROUND ALL OUTDOOR STORAGE PILES.

Yard Arrangement An Essential Feature

In every properly arranged building material yard, space for the storing of the various materials is given serious consideration and, as a result, the warehouses for the storing of lime, hard wall plaster, cement and kindred products are located in such a manner that they can be reached directly from incoming cars and at the other end by wagons used in the delivery of such material. Every well arranged yard should have its switch track located so that materials may be unloaded directly into the warehouse or onto wagons or motor trucks as desired.

An ideally arranged yard is located in Milwaukee, Wis., and conducted by the W. H. Pipkorn Co. A driveway through the entire length of the plant brings one into access with all of the buildings and barns. A switch track is so arranged that incoming materials can be placed direct from the car into the warehouse or storage place allotted them. All the materials requiring indoor space are properly and adequately provided for and such commodities as sewer pipe, drain tile and other clay products are stored in a large open yard.

As will be noticed in one of the accompanying illustrations, a driveway has been left between the space in the yards devoted to the storing of clay products and the track, and a motor truck may be

and has as his valuable assistant, Homer H. Pipkorn. The company is conducted as a stock corporation and it has been the aim of Mr. Pipkorn for years to give his employes an opportunity to become stockholders whenever their years of service and records of work warrant him in extending them this privilege. The company has always paid handsome dividends, and naturally the men are eager for the opportunity to become financially interested in the firm.

In addition to retailing building materials in the Milwaukee market, the W. H. Pipkorn Co. acts as jobbers throughout the state of Wisconsin.

FAMILY JARS—AND FLUE LINING.

Under the title, "Family Jars; What Happened in One House in Particular," Thompson Bros., of Windsor, Ont., have published a humorous article which cleverly and strikingly calls attention to the necessity of having chimneys properly built with fire clay flue lining. The story follows:

What Happened in One House in Particular.

Once upon a time there lived a family in a house that had a chimney—just like thousands and thousands of other houses have—and this family occasionally had an animated family jolt—just like thousands and thousands of other families have.

But, alas, one day they had such a jarring—just like thousands and thousands of other families have—that not only was the family jarred, shaken, jolted and shocked, but the furniture, and the walls, and the chimney, too.

(Now go slowly and read carefully)—suddenly one member of the family (read faster) slammed a door, just like thousands and thousands of other doors are banged—right in the face of another member of the family. Sad—but true.

"Whew, I guess I'll get out," thought a lively little brick 'way up in the chimney; and promptly with the slamming of the door, out he jumped and down he went.

"I think I'll go, too," said the fire a little scarily, so up the chimney he rushed pell-mell till he spied the hole left so recently by the lively little brick. Here he scurried in and way back in the corner he sat down on a nice dry wood ceiling joist to hide.

And the house burned down.

And the family were jarred still more when they discovered—just like thousands and thousands of other families will discover—that their loss was many times the price it would have cost to have had their chimney properly built with fire clay flue lining, even if they had been able to collect the insurance which the company refused to pay because they had neglected to repair their chimney.

NEWS OF WESTERN RETAILERS.

The Spicer Lumber Yard at Fillmore, Mo., doing an annual business of from \$10,000 to \$100,000 is for sale.

T. A. Gabriel of the Gabriel Lumber Co., Topeka, Kan., is in the market for a yard.

The Sack Lumber and Coal Co. are constructing a new shed, twenty-six by forty-two, at their Dorchester, Neb., yard. The front part will be arranged for office purposes.

E. J. Spirk of Wilber, Neb., has just completed a dandy new shed which has a capacity of one million feet.

Henry Burger of Wilber, Neb., is erecting a new office. As soon as it is finished he will start work on a new shed.

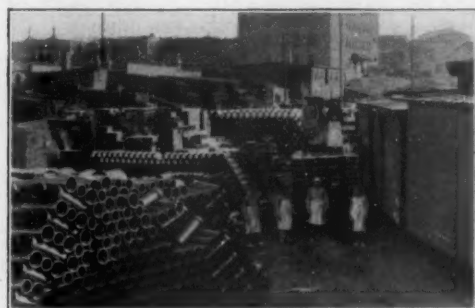
H. G. Bredemeier has purchased the property of the State Line Lumber Co., at Mayberry, Neb., and is remodeling the plant. He will carry a full line of hardware in addition to building materials.

The Sullivan Hickey Lumber Co. have bought the yard of M. J. Byrne at Dawson, Neb. J. H. Hickey is the manager.

S. M. Moody, formerly manager for the Nold Lumber Co. at Parnell, Mo., is now with Searle & Chapin at Centralia, Kan. L. Long has taken the position at Parnell.



UNLOADING LATH FROM CAR BY GRAVITY CONVEYOR.



CLAY PRODUCTS STORAGE YARD AND DRIVEWAY FOR LOADING DIRECT FROM CARS

seen loaded with fireproofing tile. It is the policy of the Pipkorn company to use as many men as necessary in loading these trucks in order that a minimum amount of time will be lost in the loading and delivering of materials. Being equipped with a number of trucks, the firm is in a position to keep the men busy practically all of the time until a car is unloaded. Should a lull in activities occur, there is always another car containing materials to go into the storage pile ready to be unloaded.

A gravity conveyor is in use by this company and wherever practical, is put into service.

W. H. Pipkorn is president and principal owner

J. P. Brown has been succeeded by H. P. Halley as manager of the T. J. Stewart yard at Comanche, Okla. Mr. Brown has associated himself with the Clarke Bates Co. at Dewey, Okla.

C. T. Field has succeeded C. G. Wilson as manager of the J. C. Wooldridge yard at Wellington, Tex.

J. L. Adams of Wynnewood, Okla., is in Rochester, where Mayo Bros. are operating on him.

A. J. Higgins, of Platte City, Mo., was a delegate to the Democratic convention at St. Louis, Mo.

On June 7, George E. Bucknell of Bucknell & Murty, Sterling, Neb., was married to Miss Mildred White.

The Fullerton Lumber Co. at Oakland, Iowa, has one of the most modern yards in Iowa in the new one recently completed. Fire destroyed the old yard early this spring.

F. A. Mullett for some time manager of the Long-Bell Lumber Co. at Enid, Okla., will leave next week for Lake Charles, La., to take a position in a Long-Bell mill at that point. He will be succeeded by J. E. Pennybaker, formerly of Stroud, Okla.

Sunday, May 14, the sheds of J. Shumway & Son at Lyons, Neb., were destroyed by fire supposed to have been caused by lightning. The loss was fully covered by insurance.

C. P. Van Vliet, formerly yard man for the Stroup Lumber Co., Tebo, Kan., has been promoted to manager.

G. C. Mathews, of The Mathews Lumber Co., of Woodbine, Iowa, spent a few weeks at Lake Okoboji, where he has a cottage.

A. V. Longenecker, formerly with Leidigh Havens Lumber Co., at Barnard, Kan., succeeded C. C. Dingee in the management of the Peoples' Lumber & Coal Co., at Beloit, Kan. Mr. Dingee is now on the road for the Chicago Lumber & Coal Co.

O. P. Mauck, a Cleveland, Okla., lumber dealer recently drilled in a 150-barrel well on one of his town lots.

J. T. Simmons, formerly the Cleveland, Okla., manager for Rouhds & Porter Lumber Co., took charge of the Cleveland Lumber Co. yard at that place on June 2.

The Norrow-Lyddon Lumber Co. has purchased the A. H. Hill and C. A. Bezona Lumber Yards at Longton, Kan. The yards have been consolidated and extensive improvements made to buildings and sheds. Edward Clemens of Garnett has been appointed manager.

E. A. Stone, of Denison, Ia., manager and buyer for Stewart Lumber Co.'s yards in western Iowa, married June 1 and left same day for two weeks' honeymoon trip through the West.

H. M. Snare, formerly with J. G. Wilson Lumber Co., at Coldwater, Kan., was transferred to the Mulhall, Okla., yard, succeeding J. J. Wilson, who resigned on account of poor health.

E. D. Brock, of Jacksonville, Mo., is building a new yard. The old one was in bad shape.

The A. L. Scott Lumber Co. has succeeded Malone-Arnup Co., at DuBois, Neb. J. R. Montgomery, formerly with the first named company at Frankfort, Kan., is manager.

Ben Borgmeyer, manager of the Farmer's Lumber & Grocery Co., Dodge, Neb., spent a month at his old home near Jefferson City, Mo.

The Newman Grove Milling Co., of Newman Grove, Neb., has moved into its new office, which is one of the best in the state.

The Farmer's Elevator Association of Lindsay, Neb., is erecting a new elevator with a capacity of 25,000 bushels.

C. H. Burrell has accepted a position as manager of J. Thomas & Son's Lumber yard at Dunlap, Kan., succeeding R. H. Dewar, who has entered the automobile business in that city.

B. M. Athey is successor to the Enid Lumber Co., at Enid, Okla., L. B. McClellan retiring from the business. Mr. Athey will also put in a yard at Billings, Okla., on account of oil developments there, and the increased demand for lumber.

J. F. Brown, of Comanche, Okla., has accepted a position as manager of the Clark-Bates Lumber Yard at Dewey, Okla.

E. G. Greene, formerly manager of the A. Aitken yard at Dillwyn, Kan., has been transferred to the Aitken yard at Macksville, Kan.

R. P. Davidson, formerly yardman for Welsh Lumber Co., Macksville, Kan., has been promoted to manager, succeeding L. H. Nolder.

H. F. Anawalt, of Dewey, Okla., formerly manager for Clark-Bates Lumber Co., has accepted the management of the A. Aitken yard at Dillwyn, Kan.

Moses Campbell, of Atkinson, Neb., has just completed a new shed forty by 257 feet, surrounded by an attractive concrete block wall.

On the tenth day of May N. R. Apple started on his thirty-first year as manager of the Yorktown, Iowa, yard for the Green Bay Lumber Co.

Bill Stuart, of the Fullerton-Stuart Lumber Co., with headquarters in Okmulgee, Okla., was a presidential elector to the Progressive convention and alternate to the Republican convention.

A. Aitken, of St. John, Kan., has recently purchased four yards from the Western Lumber & Supply Co., of Macksville, Kan. The yards trans-

ferred are at Macksville, Dillwyn, Coldwater and Hopewell, Kan. The Western Lumber & Supply Co. will retain but one yard at Belpre, Kan.

J. B. Hall succeeds L. B. Laird as manager of the Lawrence Lumber Co., at Lawrence, Neb. Mr. Laird moved to Kearney, Neb., where he will be employed by the Stickle Lumber Co.

O. E. Sterrett, formerly manager of the Hawkeye Lumber Co., at Hameston, Iowa, has been transferred to Albia as manager for the same company.

P. C. Roberts of Bucklin, Mo., who recently sold his yard is in the market for a new one.

Wisconsin Dealers to Enjoy Outing at Cabot's Lodge

As a result of the exceptionally good fellowship enjoyed by 125 retailers last year at Cabot's Lodge, a summer resort five miles distant from Sturgeon Bay, the Building Material Dealers of Northeastern Wisconsin have arranged for another outing on Saturday and Sunday, July 15 and 16, which will outnumber the gathering of last year and to which all of the retailers in northeastern Wisconsin and as far south as Fond du Lac and Sheboygan and as far north as Marinette are invited.

There is nothing like an outing at a summer resort for the promulgation of good-fellowship and the restoring of confidence among men engaged in the building material business. Men attend lodges, churches, local business organizations, and other meetings for mutual benefit, and for this same reason men engaged in a kindred line of business should get together as often as possible. The rubbing elbows, exchanging experiences and getting better acquainted, works better than pills and medicines for stimulating confidence and aggressiveness. That these objects can be accomplished was demonstrated at Cabot's Lodge last year and will be demonstrated again on Saturday and Sunday.

Dealers are urged to leave business cares and worries behind and arrange to reach Sturgeon Bay on Saturday, July 15, where the Sturgeon Bay Commercial Club will transport them from the city to Cabot's Lodge. This makes a beautiful little trip of five miles on the water and will long be remembered by all who attend this outing.

Dealers are requested not to forget their ladies. Wives, sweethearts and daughters are wanted at the outing to make it a complete success. There will be no set program, no business speeches, but an elaborate banquet will be staged at seven o'clock Saturday night and will be followed by a dance.

The Co-operative Orchard, which is the largest cherry orchard in the world, will be visited by autos on Sunday and guests are assured that they will be permitted to carry away all the cherries they can possibly eat.

Following the trip through the orchard the machines will wend their way along Green Bay shore to the State Park where Sunday dinner will be enjoyed at resorts bordering the park.

Make Reservations Immediately.

Due to the fact that Cabot's Lodge is a popular summer resort and visitors will be arriving at about the same time as the building material dealers' outing, it is essential that dealers inform the committee in charge of arrangements as early as possible of their plan to attend the outing, so that reservations can be made. The men actively behind the movement are H. R. Isherwood, Enos Colburn, Stephen Balliet, W. J. Nuss, R. C. Brown and M. B. Helmer. All requests for reservations and other information should be addressed to Mr. Isherwood, care of the Sawyer Lumber Co., Sawyer, Wis. Sawyer is in reality a part of the city of Sturgeon Bay and Mr. Isherwood is on the ground prepared to see that every requirement for reservations will be taken care of.

Retailers who attended the outing last year were

so well pleased with the sights witnessed in Door county and the hospitality of each other that during every meeting of the Fox River Valley Building Material Dealers' Association and all of the various association meetings since that time, part of the sessions have been devoted to discussing the past and arranging for the coming outing.

Retailers will make no mistake in taking a train that will bring them into Sturgeon Bay on Saturday, July 15. Upon arriving there, inquire for the Commercial Club or for Mr. Isherwood and you will be in safe hands until you leave Sturgeon Bay for home.

In addition to the retail building material dealers, lumber retailers of the district have been invited and representatives of the various manufacturers shipping into the district will also be present.

CINCINNATI RETAILERS BUSY.

Cincinnati, Ohio, July 3.—Activity in building operations remains at a comparatively high level, although lately there has been noted some slackening off in the volume of new work projected. This has no apparent cause, excepting possibly the laborers' strike which has now been in progress for several weeks without any sign of settlement. The strike has affected several of the larger jobs rather seriously, in spite of the small number of men involved, and the natural reluctance of builders to start work in the face of labor trouble is accountable for the holding up of a good deal of work. Material dealers, consequently, have felt the let-up, and are ardently wishing for a season without any labor trouble, which, however, seems to be almost an impossibility. Local concerns have been going outside lately, with some success, for contracts.

With the increased force of salesmen available at the Brick Sales Co., a division of labor has been found possible and profitable. George Rinkenger, who for some time was practically the whole force himself, will hereafter devote himself exclusively to the sale of "Vitrolite," for which the company is local agent, and with which he has had marked success. Messrs. Riggs and Wever, both experienced brick men, will take care of the brick end of the business.

One of the largest jobs let so far this season, as far as the brick used is concerned, fell to the Cincinnati Clay Products & Supply Co. recently, this being the brick for the new medical college building at the Cincinnati General hospital. About 300,000 brick will be required, and they will come from the plant of the Eastvale Brick Co., Eastvale, Pa. The brick for the Reading school will also be furnished by the Cincinnati concern, 100,000 Greendale rugs being called for in the contract.

Union Manufacturing and Distributing Co., Wilmington, Del.; capital, \$100,000; to engage in the manufacture and distribution of fireproof materials; incorporators, F. W. Buck, George W. Dillman and M. L. Horty.

Association News

Important Communications and Notices from Officials of the
Various Organizations and Records of Recent Happenings

James H. Allen, President, National Builders' Supply Association, Lincoln, Neb.
Charles M. Kelly, President, New England Builders' Supply Association, Providence, R. I.
Frank H. Genung, President, Mason Material Dealers' Association of New Jersey, Newark, N. J.
W. O. Holst, President, Ohio Builders' Supply Association, Toledo, O.
B. L. Grove, President, Del-Mar-Col Builders' Material Dealers' Association, Washington, D. C.
H. E. Shadle, President, West Virginia Lumber and Builders' Supply Dealers' Association.

N. B. S. A. MEETINGS FOR JULY.

Indiana.

District No. 2.—Meets at Wayne Hotel, Ft. Wayne, Thursday, July 20, 6:00 p. m.
District No. 3.—Meets at Kabela Banquet Hall, South Bend, Wednesday, July 26, 6:00 p. m.
District No. 4.—Meets at Fowler Hotel, LaFayette, Ind., Wednesday, July 19, 12:00 o'clock noon.
District No. 5.—Meets at Barnett Hotel, Logansport, Ind., Wednesday, July 19, 6:00 p. m.
District No. 6.—Meets at Courtland Hotel, Kokomo, Ind., Friday, July 21, 6:00 p. m.
District No. 7.—Meets at New Grand Hotel, Anderson, Ind., Thursday, July 20, 12:00 o'clock noon.

Wisconsin.

District No. 1.—Meets at Beaumont Hotel, Green Bay, Monday, July 24, 6:00 p. m.
District No. 2.—Meets at Sherman House, Appleton, Tuesday, July 25, 6:00 p. m.
District No. 3.—Meets at Hotel Erving, Fond du Lac, Wednesday, July 26, 6:00 p. m.
District No. 4.—Meets at Grand Hotel, Sheboygan, Thursday, July 27, 6:00 p. m.
District No. 9.—Meets at Myers Hotel, Janesville, Thursday, July 13, 6:00 p. m.

Michigan.

District No. 1.—Meets at Statler Hotel, Detroit, Friday, July 7, 7:30 p. m.
District No. 3.—Meets at Park-American Hotel, Kalamazoo, Wednesday, July 12, 6:00 p. m.

NEW N. B. S. A. MEMBERS.

The following named firms have been received into the membership of the National Builders' Supply Association since June 7, at which time the last report of this nature was made in ROCK PRODUCTS AND BUILDING MATERIALS:

WISCONSIN.

District No. 3.

Ripon Lumber Co., Ripon.
Middletown Lumber & Fuel Co., Ripon.
Griffith Lumber Co., Juneau.
Hartzheim Bros., Juneau.
Bodden Bros. Co., Horicon.
William Firehammer, Horicon.
F. G. Hruske, Brandon.
C. W. Keuhn, Fairwater.
Jacob Koll, Theresa.
Farmers' Mercantile Co., Allenton.
M. Stoffel, Allenton.
M. L. Weis, Allenton.
Froelich Mercantile Co., Jackson.
Tinkham & Mielke, Fairwater.
Roedl-Jacobs Co., Beaver Dam.
Denison & Cooper, Hartford.
Mayville Fuel Co., Mayville.
Charles Mann, Mayville.
Hauser Bros. Co., Rubicon.
W. J. Collins, Clyman.
Universal Lumber & Coal Co., Lebanon.
A. Salisbury, Rosendale.
Stellmackel Bros., Van Dyne.
Curran & Schmidt, Campbellsport.
Yawkey-Crowell Lumber Co., Waupun.
Loomans Lumber Co., Waupun.

District No. 4.

Joe Ubbink, Ft. Washington.
S. E. Wierman's Sons, Waldo.
F. C. Mintzaff, Grafton.
Cedarburg Elevator Co., Cedarburg.
Plymouth Lumber & Fuel Co., Plymouth.
Saeman-Ziegler Co., Adell.
W. C. Boehringer, Two Rivers.
Charles A. Maas, Thiensville.
William Frickbe Sons, Manitowoc.

District No. 5.

Frank Zimmerman, Cadott.
W. W. Shong, Boyd.

District No. 6.

Spooner Lumber Co., Spooner.
Inter-State Lumber Co., Clear Lake.
A. J. Martin Lumber Co., Bloomer.
Chetek Lumber & Supply Co., Chetek.
Hammond-Chandler Lumber Co., Rice Lake.
Island City Lumber Co., Cumberland.
William Greech, Chetek.
Western Lumber Co., Barron.
Miller-Olcott Lumber Co., Cumberland.
Lakeside Lumber Co., Shell Lake.
D. E. Kiser Lumber Co., Cameron.
Barron Lumber Co., Barron.

District No. 7.

Sarnow Lime Co., Milwaukee.
Milwaukee Cement Co., Milwaukee.
Lake Shore Stone Co., Milwaukee.
Whitnall Coal & Supply Co., Milwaukee.
Henry Cook Co., Milwaukee.
J. Druecker Sons Co., Milwaukee.
F. Wittig & Co., Milwaukee.
Cooper & Utter Lumber & Fuel Co., Nashotah.
Oconomowoc Lumber & Fuel Co., Oconomowoc.
Caveney & Co., South Milwaukee.
South Milwaukee Fuel & Supply Co., South Milwaukee.
Yawkey-Crowley Lumber Co., Watertown.
Barker Lumber & Fuel Co., Watertown.
Wilbur Lumber Co., West Allis.
Fisher Building & Supply Co., Milwaukee.
West Allis Fuel & Supply Co., West Allis.

District No. 9.

DeForest Lumber Co., DeForest, Wis.
William Hoffman, Middleton.
Gibbon Lumber Co., Sun Prairie.
C. S. Dodge & Son, Monroe.
Boyson & Rayne Lumber Co., Madison.
Monroe Lumber & Fuel Co., Monroe.
City Fuel Co., Beloit.
Beloit Lumber Co., Beloit.
Keeler Lumber & Fuel Co., Beloit.
Schaller & McKey Lumber Co., Janesville.

MICHIGAN.

District No. 2.

Ver Hage Milling Co., Zeeland.
Derks-Buter Co., Zeeland.
Muskegon Cement & Fuel Co., Muskegon.
W. D. Hamilton Lumber & Coal Co., Saugatuck.
T. Kippel's Sons, Holland.
Scott-Lugers Lumber Co., Holland.
Holland Lumber & Supply Co., Holland.
Bohula Lumber & Manufacturing Co., Holland.
Construction Supply Co., Grand Rapids.
Brummel-Van Strein Co., Grand Rapids.
Wykes-Schroeder Co., Grand Rapids.
John Jasperse, Grand Rapids.
Standard Builders' Supply Co., Grand Rapids.
Battles Fuel & Building Material Co., Grand Rapids.
Grand Rapids Builders' Supply Co., Grand Rapids.
Jacob Helmink, Reeman.
Edwards Lumber Co., Muskegon.
The Wiseloge Co., Muskegon.
Fremont Lumber & Fuel Co., Fremont.
Belding Lumber Co., Belding.
Marshall-Wright Lumber Co., Ionia.
R. L. Redemsky, Ionia.
A. E. Otis & Co., Sarnac.
W. C. Page-Wirtz Co., Ionia.
H. K. Talcott & Co., Sarnac.
Belknap Lumber Co., Greenville.
Greenville Lumber Co., Greenville.

District No. 3.

C. H. Haas Co., Kalamazoo.
Griswold & Nichols, Kalamazoo.
Kalamazoo Lumber Co., Kalamazoo.
North Lumber & Manufacturing Co., Kalamazoo.
Johnson-Howard Co., Kalamazoo.
Peter Malloch, Kalamazoo.
Celery City Lumber Co., Kalamazoo.
J. E. Gill, Kalamazoo.
Van Bochove Sons Mfg. Co., Kalamazoo.
Godfrey Lumber Co., Kalamazoo.
Union Trim & Lumber Co., Kalamazoo.
S. H. Burman, Kalamazoo.
Griswold & Nichols, Allegan.
I. M. Smith, Marcellus.
W. M. Hazen, Three Rivers.
W. P. Thompson Lumber Co., Augusta.
M. Judd & Son, Dowagiac.
Corlett-Stone Lumber Co., Three Rivers.
Frank Austin Co., Mendon.
D. A. Worthington, Mendon.
Will A. Cavin, Sturgis.
R. L. Webb Lumber Co., Sturgis.
Vicksburg Lumber Co., Vicksburg.

District No. 4.

Rathbun & Kraft Lumber & Coal Co., Battle Creek.
Armstrong & Brown, Battle Creek.
C. R. Brewer Lumber Co., Battle Creek.
Battle Creek Lumber Co., Battle Creek.
I. H. Stiles, Battle Creek.
W. J. Kirkpatrick, Battle Creek.
Morgan & Schaefer, Battle Creek.
J. A. Smith Fuel & Feed Co., Battle Creek.

District No. 5.

East End Builders' Supply Co., Jackson.
Watts-Moorhouse Co., Jackson.
I. N. DeLamater, Jackson.
Dewey-Smith Co., Jackson.
The Robert Lake Co., Jackson.
G. W. Thorpe, Jackson.

INDIANA.

District No. 3.

W. C. Curtis & Co., Plymouth.
James S. Chilcote, Nappanee.
C. R. Sparks, Berrien Springs, Mich.
W. L. Babbitt, Niles, Mich.
W. P. Robbins, Benton Harbor, Mich.
B. M. Nowlen & Co., Benton Harbor, Mich.
George Mills & Son, Benton Harbor, Mich.

SOUTH BEND FEEDS IN STYLE.

At the monthly meeting of retail building material dealers in the South Bend, Ind., territory, held at South Bend on Wednesday, June 28, an attractive arrangement of the tables in the shape of a cross and decorated with roses was an interesting feature. An exceptionally delicious menu had been prepared and being building material dealers with the usual reputation for eating, every morsel of food disappeared before the participants engaged in speech making.

The address of the evening was made by H. S. Gaines, who had been especially invited for the purpose of giving an account of the activities of the National association in other states. Other speakers were E. R. Sullivan, Peerless Portland Cement Co.; W. E. Cobean, Wolverine Portland Cement Co.; F. L. McClintic, Burt Portland Cement Co.; M. Heuman, Peninsular Portland Cement Co.; William F. C. Dall, Northern Indiana Brick Co.; and A. C. Heitschmidt, a retailer of Michigan City.

At this meeting applications for membership were received from the W. C. Curtis Co., Plymouth, and James S. Chilcote, Nappanee.

The attendance was as follows:

J. S. Chilcote, Nappanee.
E. R. Newland, Builders' Supply & Specialty Co., South Bend.
D. H. Herbester, Isbell Lumber & Coal Co., Elkhart.
William Bensman, Elkhart.
Timothy H. Holdeman, Elkhart.
M. Hueman, Peninsular Portland Cement Co., Jackson, Mich.
W. R. Bard, Munger Lumber & Coal Co., Elkhart.
Dan R. Lantz, S. C. Lantz Sons, South Bend.
O. M. Vorhees, Lowe Brothers Lumber Co., Mishawaka.
William F. C. Dall, Northern Indiana Brick Co., Michigan City.
C. H. DeFrees, South Bend.
A. C. Heitschmidt, Michigan City.
W. E. Cobean, Wolverine Portland Cement Co., Cold Water, Mich.
J. F. Sanders, Frank Lumber Co., Mishawaka.
F. M. Vase, Frank Lumber Co., Mishawaka.
Walter M. Hildebrand, Staples-Hildebrand Co., South Bend.
Guy Staples, Staples-Hildebrand Co., South Bend.
E. J. McErlain, Builders' Supply & Specialty Co., South Bend.
John K. Smoger, A. Smoger & Son, South Bend.
C. R. Hunt, Jr., U. S. Gypsum Co., Chicago, Ill.
George J. Griewank, Griewank Bros., LaPorte.
W. N. Haas, North Liberty Lumber & Coal Co., North Liberty.
J. E. Olinger, Lakeville Lumber Co., Lakeville.
Frank H. Foe, Burbon Lumber & Coal Co., Burbon.
Lewis Mason, Etna Green Lumber & Manufacturing Co., Etna Green.
J. W. Stackhouse, Etna Green Lumber & Manufacturing Co., Etna Green.
W. W. Dye, Hamlet.
F. Anderson, Herzog & Anderson, Mishawaka.
F. L. McClintic, Burt Portland Cement Co., Bellevue, Mich.
E. R. Sullivan, Peerless Portland Cement Co., Union City, Mich.
C. I. Ferrier, J. O. Ferrier Lumber Co., Culver, Ind.
Phillip D. Murray, Burr Oak, Ind.

JACKSON DEALERS ORGANIZE.

Retail building material dealers of Jackson, Mich., have been organized into a local district of the National Builders' Supply Association with G. W. Thorpe as chairman and the following members:

Harry A. Taylor, East End Builders' Supply Co.
C. B. Elwood, Watts-Moorhouse Co.
I. N. DeLamater.
M. O. Dewey, Dewey-Smith Co.
Robert Lake, The Robert Lake Co.

COAL DEALERS MEET AT MADISON.

The annual meeting of the Illinois and Wisconsin Retail Coal Dealers' Association will be held at the Park hotel, Madison, Wis., on July 25, 26 and 27. C. S. Dodge, building material and coal dealer, at Monroe, Wis., is secretary of the association.

RETAILERS MEET AT MILWAUKEE.

A meeting of the retail building material dealers of Milwaukee and nearby communities was held at the Wisconsin hotel, Milwaukee, Wis., on Friday evening, June 23. A. J. Blair, of the Lake Shore Stone Co., Milwaukee, who had at a previous meeting been elected chairman, presided at the meeting. Between courses he welcomed the dealers on behalf of the Milwaukee retailers and made each man in turn arise, mention his name, firm name and the city in which he was doing business.

Following the supper, W. H. Pipkorn, of Milwaukee, was introduced as a director of the National Builders' Supply Association, who stated that his firm had been a member of the association for a number of years, and that for two years he had been honored by being elected a director. He recited some of the accomplishments of the association, as well as a few of the objects and hopes for future improvement.

G. A. Olsen, of ROCK PRODUCTS AND BUILDING MATERIALS, gave a talk on "Competition and Co-operation."

W. J. Nuss, chairman of district committee No. 4 and manager of the Pantzer Lumber Co., Sheboygan, thanked the dealers for their invitation to attend the meeting, and stated that he was pleased to attend because at these meetings it gives the individual retailer a chance to meet his fellow dealers, who would not be met in any other way. Mr. Nuss stated that he had heard on a number of instances the statement expressed that retailers find their competitors are much better fellows than they ever imagined them to be. He referred to credits and the necessity of looking up a man's record before investing too much confidence in him.

M. B. Helmer, chairman of district committee No. 3 and operating the Helmer Milling Co. at Fond du Lac, recited the experience of the retailers in his home city previous to the advent of the association idea. He stated that for some time there had been quite a fight on between the dealers and when Mr. Gaines stated that the association was in a position to remedy matters, he was not believed. The retailers, however, were willing to join the association and see what educational work was possible to accomplish in that district. As a result practically all grievances and differences have been remedied and at the present time ninety-five per cent of the dealers in the district are members of the association. "The association has done a lot of good in our territory and I know it will wherever it is given a fair trial," said Mr. Helmer.

J. C. Lemberg, of the Lehigh Portland Cement Co., told how much more pleasant it would be for the boys on the road selling cement if the dealers would succeed in getting a fair margin of profit on all commodities sold.

E. A. Dolan, assistant engineer of the Universal Portland Cement Co., entertained the retailers by reciting a few interesting stories.

E. E. Mick, of the same company, stated that the manufacturers are with the retailers in all of their endeavors to improve their business and promised the support of his company whenever service could be rendered. He criticized the practice of some retailers in showing consumers invoices covering cost of materials and contributed the reason that prices on building materials are low to the fact that consumers know too much about the first cost of materials, and too little about the actual cost of doing business, and usually compel these dealers to base the price of their materials on their cost at factory plus freight, failing to take into consideration expenses of handling, selling and delivering.

Mr. Blair gave an interesting account of the Milwaukee dealers, who about eighteen months ago organized an association and established regular offices, which are open during business hours in the Cream City. He stated that as a result of this organization the retailers have secured more con-

fidence in each other and have learned to discount contractors' statements to the effect that they can get cement at five cents a barrel less from a competitor. He stated that the retailers meet once a week at luncheon, and in order to secure the presence of all the retailers a penalty is placed on the absent ones. This money is placed in a sporting fund and quite frequently fishing trips are enjoyed by the members of the Milwaukee organization.

Mr. Gaines, of the National association, dramatically opened his remarks with the statement, "You are here in the most important business venture in your industrial career." He quoted Mr. Hurley, of the Federal Trade Commission, in referring to the government's attitude toward associations and said that for the first time in history the government is encouraging the association of men engaged in a kindred line of business.

He referred to the numerous definitions of retailers as adopted by the various manufacturers and by the lumbermen's organization. He related the various conditions under which some dealers handle building materials and stated that a definition broad



A. J. BLAIR, CHAIRMAN,
District Committee No. 5, Wisconsin Division, N. B. S. A.

enough to cover all of the building material dealers of the country has not yet been made, but that after a thorough investigation of conditions the National Builders' Supply Association at one of its annual meetings would undoubtedly solve this problem. He finished his talk with a plea that retailers become affiliated with the National association. As a result, every firm represented signed a membership blank.

The attendance was as follows:

W. H. Pipkorn, W. H. Pipkorn Co., Milwaukee.
H. H. Pipkorn, W. H. Pipkorn Co., Milwaukee.
A. C. Tews, Tews Lime & Cement Co., Milwaukee.
W. T. Berthelet, Milwaukee Cement Co., Milwaukee.
H. Prange, Tews Lime & Cement Co., Milwaukee.
A. J. Blair, Lake Shore Stone Co., Milwaukee.
A. E. Hinners, Vogt Brick & Supply Co., Milwaukee.
B. E. Kaestner, Waukesha Lime & Stone Co., Milwaukee.
A. A. Fischer, Fischer Building Supply Co., Milwaukee.
Walter C. Fischer, Fischer Building Supply Co., Milwaukee.
C. Sarnow, Sarnow Lime Co., Milwaukee.
John P. Druecker, J. Druecker Sons Co., Milwaukee.
Julius Ranszewski, West Allis Fuel & Supply Co., West Allis.
E. I. Lindou, West Allis Fuel & Supply Co., West Allis.
A. W. Hilker, Hilker Brick Co., Racine.
Ed Acklan, D. P. Wigley Co., Racine.
James Frasen, D. P. Wigley Co., Racine.
C. Stafford, Wilbur Lumber Co., West Allis.
W. J. Nuss, Pantzer Lumber Co., Sheboygan.
M. B. Helmer, Helmer Milling Co., Fond du Lac.
E. E. Mick, Universal Portland Cement Co., Chicago.
E. A. Dolan, Universal Portland Cement Co., Chicago.
J. C. Lemberg, Lehigh Portland Cement Co., Chicago.
F. D. Matheson, Oconomowoc Lumber & Fuel Co., Oconomowoc.
L. E. Utter, Cooper & Utter Lumber Co., South Milwaukee.
James Caveney, Caveney & Co., South Milwaukee.
G. H. Barker, Barker Lumber & Fuel Co., Watertown.
Robert Hayman, South Milwaukee Fuel & Supply Co., South Milwaukee.

H. K. Contes, National Builders' Supply Association, Chicago.
Haydon S. Gaines, National Builders' Supply Co., Chicago.
George A. Olsen, ROCK PRODUCTS AND BUILDING MATERIALS, Chicago.

SECOND MEETING AT MADISON.

The second meeting of local district committee No. 9, Wisconsin division, National Builders' Supply Association, was held at the Park hotel, Madison, Wis., on Thursday evening, June 22. Chairman C. F. Cooley called the meeting to order, and after the reading of the minutes of the last meeting by L. H. Atwood, Mr. Cooley gave the assembled retailers a heart-to-heart talk. He said in part:

"This is a love feast. We haven't a very great attendance—it isn't the fault of the people; it is our own fault. We want to make the district second to none in the state and we must get out and work to do it."

Haydon S. Gaines, field secretary of the association, talked on the government's attitude toward associations and quoted from E. N. Hurley's address before the Cement Manufacturers' Association of Chicago, as printed in the May 22 issue of ROCK PRODUCTS AND BUILDING MATERIALS.

In a general discussion on the retailing of building materials, including the costs of unloading, warehousing, delivery, depreciation and interest on investments, outstanding accounts and value of stock, practically everyone present took part. Those who dwelt at length on these topics were F. H. Beswick, of Conklin & Sons, Madison; C. S. Dodge, of Dodge & Sons, Monroe; J. S. Cusick, of Cusick, Richards & Roberts, Madison; D. J. Chase, of Gibbons Lumber Co., Sun Prairie; A. E. Utter, of Middleton Lumber Co., Middleton; John Mitchell, of Lehigh Portland Cement Co., Chicago; Mr. Heddles, of Brittingham & Hixon Lumber Co., Madison, and G. A. Olsen, of ROCK PRODUCTS AND BUILDING MATERIALS, Chicago.

BATTLE CREEK ENTERTAINS KALAMAZOO.

Battle Creek, Mich., dealers were organized by Field Secretary Gaines into local district committee No. 4, Michigan Division, N. B. S. A., on June 26, at which time they acted as hosts to the retailers of Kalamazoo. At the meeting Fred Wells, of Rathbun & Craft Lumber Co., was elected chairman and George H. Schaefer of Morgan & Schaefer, secretary. Other members of the district are:

I. H. Stiles.
J. S. Smith Fuel & Feed Co.
Armstrong & Brown.
Battle Creek Lumber Co.
W. J. Kirkpatrick.
C. R. Brewer Lumber Co.

All of the association members of Kalamazoo, headed by Chairman Floyd Johnson, attended the meeting in a body, bringing with them applications for six new memberships, the result of an automobile trip through their territory a few days previous.

In addition to the retailers who took part in this meeting, speeches were made by W. E. Cobean, of the Wolverine Portland Cement Co.; F. L. McClintic, Burt Portland Cement Co.; E. R. Sullivan, Peerless Portland Cement Co., and H. S. Gaines of the National Association.

The Kalamazoo dealers are going to give a return dinner to the Battle Creek aggregation in the near future.

CENTRAL MISSOURI DEALERS MEET.

The annual convention of lumber dealers of central Missouri was held in Sedalia, Mo., June 29. An attendance that compared favorably with any similar event listened to a complete and satisfactory program. Various phases of dealers relations with the consumer and manufacturer were treated upon. The handling of Portland cement received its share of attention.

NEWS of the TRADE

NEW ENGLAND BREAKS RECORDS.

Boston, Mass., July 3.—The wonderful activity of the builders of New England so far this year has set up the enormous total of over \$100,000,000, thereby breaking all existing records, not excepting the banner year of 1912. These figures for building are the greatest ever known, exceeding 1912 by over \$5,000,000.

In Metropolitan Boston, the building permits of June reached the enormous total of \$5,634,000 for 477 projects, according to the F. W. Dodge Co. Construction work is well advanced on the new Harrison office building in the "New Mercantile District." The material is concrete and steel, with flat slab floors.

Operations are proceeding generally with despatch. A settlement was secured on the demands of building laborers, although immediately after there was a walkout by the cement finishers. Operations continue with little apparent diminution. Labor has been made more scarce not only by the busy factories, but by calls for horse ship crews and overseas war enlistments. Considerable difference has been made in the past ten days by Massachusetts sending to the Mexican border 7,000 militiamen.

This last draft on able-bodied men of the state is also partly responsible for just one more embargo after all embargoes were called off. Last Thursday the New Haven railroad notified building material dealers of an embargo to last from that day until July 6. Troop movements of the early part of the week and summer tourist rush over the Fourth of July made such demands upon railroad equipment and crews that embargo is resorted to again temporarily. With New England in the midst of its very largest building year, the temporary halt is anything but pleasing.

SMALL JOBS PLENTIFUL IN LOUISVILLE.

Louisville, Ky., July 3.—Rainy weather during the greater portion of June held back building operations to some extent, but things as a whole have been very good this spring and the contractors and building supply men are generally satisfied. A few large contracts which are in sight are coming out a little slowly, but the volume of small business is mounting up nicely. Several of the leading supply houses report business far ahead of this period of last year, and claim that the first six months of the year show a nice gain.

L. M. Rice, president of the Central Paint & Roofing Co., reports that the demand for manufactured roofings has been exceptionally heavy all spring, and has held up later in the season than had been expected. As a rule business is quiet on roofings in June, but such was not the case this time. The six months show a big gain. High prices are not cutting much figure in the sale of manufactured roofings.

The Roy C. Whayne Co., dealers in contractors' supplies, concrete machinery, etc., have opened a handsome new store at 320 West Main street, having formerly maintained an office in the Lincoln building. At the new office the company is carrying its machinery on the floor where it can be easily demonstrated.

Captain Brinton B. Davis, a local architect, is working on plans for a new home for the Baptist Home Training School, which proposes to erect a

\$100,000 building at Preston and Broadway. This contract and the new Auditorium contract are the ones which the local supply men and contractors are watching for just now.

BUILDING OPERATIONS ACTIVE.

Milwaukee, Wis., July 3.—With the figures for building permits issued during the month of June showing a healthy increase over a year ago, building operations are again more active. Building material dealers are generally busy but the majority of new work is on smaller structures. The big jobs, for which permits were issued earlier in the season, are still under construction and deliveries of materials are being made right along. However, the new business is not of such an important nature. A total of 399 permits were issued on work aggregating \$997,111 for June, 1916, as against 402 permits and \$829,290 for the same period in 1915, a gain of \$167,821. The semi-annual report shows a gain of \$1,878,494, although the number of permits is less by seventy-two. The figures for the first six months in 1916 are 2,020 permits, representing construction to cost \$6,334,067. For a year ago the figures were 2,092 permits and \$4,455,573.

Throughout the state there are indications of great activities. The West Allis Lime & Cement Co., West Allis, Wis., has the contract for furnishing 2,000 barrels of cement, 2,000 yards washed sand, 6,000 four-inch partition tile, 3,200 eight-inch and 800 twelve-inch heavy duty tile on the grandstand job at the State Fair park. Washburn, Wis., has awarded a \$35,000 vitrified brick pavement contract to Thomas E. Wooley, of La Crosse, Wis. The new Oneida hotel at Rhinelander, Wis., will cost \$75,000, contract having been awarded the Appleton Construction Co., Appleton, Wis.

In Milwaukee contractors are still working on the Plankinton hotel contract, the structure to cover the entire block between West Water and Second streets, on Grand avenue. The W. J. Hoy Co. has been awarded the general contract on the new \$300,000 Miller hotel, work on which has been started on Third street, just north of Grand avenue. Several realty companies are busy on apartment buildings, ranging from \$50,000 to \$100,000. The last one announced is that of the Claridge Realty Co., which is erecting a seventeen-apartment building at Downer and Webster place.

The only drawback to the whole situation is the shortage of labor. Common laborers are scarce and those available demand high wages. With every industry working at full capacity, there are few men who are not working. The mobilization call of President Wilson has not caused a serious draw from the building trades.

MONTREAL DEMAND IMPROVES.

Montreal, July 3.—Building business is on the increase, there being planned and in course of construction a great number of smaller buildings and factories. The small buildings are chiefly residences of low average cost, while the factory construction includes enlargements to take care of the growing trade. The demand for builders' supplies is therefore on the increase.

Building conditions as represented by the building permits of Montreal, are very satisfactory. For the six months of 1916, 950 permits were issued at a valuation of \$2,434,344.

ST. LOUIS MARKET FAIR.

St. Louis, Mo., July 2.—Building material dealers here are not complaining, although only a fair demand exists for such supplies as cement, lime, plaster and some of the specialties. Sand and gravel, too, is moving in more or less satisfactory quantities. At the present time there is no market for crushed rock because the city, in constructing a large sewer, cut through a vast deposit of limestone, put in crushers and went into the crushed stone business and is selling the material at prices that would permit of shipments from here to the coast, either way. About 200,000 tons of this still remains undisposed of and until that is sold little effort will be made by dealers to secure sales, except in small quantities.

The plaster situation is extremely good, due to the wave of apartment house building that has struck the city.

A. Leiweke, proprietor of the Centaur Lime Co., one of the most prosperous building material concerns in the city, reports business as normal at the present time, his material going mostly into residences and apartment houses. His location at 3852 Market street, near Vandeventer, is important, in that it is only a short distance from the Shaw addition, where hundreds of small apartments and residences, all of brick, are being erected. Two lime kilns are kept burning at Centaur, Mo., on the Rock Island railroad, and practically all of the lime turned out is marketed through the St. Louis yard. Shipments are made from the plant, however, and quite a brisk trade of this kind is enjoyed. The product is black lime.

The Builders' Materials Co., Title Guaranty building, has the contract to supply materials for some unusually large structures, according to J. J. McNulty, general manager. These include the Marillac and Loretta seminaries and the St. Louis Cathedral school. The company has had a good business since its organization three years ago, and is the St. Louis distributor of the Oklahoma Cement Plaster Co. Finishing plaster, corner beads and metal lath form a substantial portion of its trade.

The name of the Contractors' Supply Co., of St. Louis, has been changed to St. Louis Lime & Cement Co., as it tells the story better, according to M. J. Reinagel, secretary. It supplied the materials for the Memorial Home at Grand and Magnolia avenues, just completed, and is furnishing cement, lime, sand and gravel to a large apartment house on Kingsbury place and De Bolivar street, running in the cars at Rosedale station. This building will require about 100,000 feet of gypsum blocks. The company owns the Arrowhead Lime Co., which has a plant at Brickeys, Mo., on the Frisco railroad, the name of the lime concern remaining the same because of the long term lease.

One concern here, however, will not participate in the general prosperity that is expected when it stops raining long enough for the building season to properly open, and that is the Independent Lime & Cement Co., which, two years ago, enjoyed an enviable position in the industry due to its location near the fastest growing residence section in the city. The concern was thrown into the hands of Receiver George M. Arendas two months ago, with fifty-two creditors to be satisfied, and its affairs were wound up today. The creditors will receive about forty cents on the dollar.

BOOM STRIKES ILLINOIS TOWNS.

There is considerable work going on or to be started in Illinois at the present time. At Urbana A. W. Stoolman, of Champaign, Ill., has the contract for a \$300,000 ladies' dormitory; also the contract for a building at Normal for \$100,000, one at Dixon, upon which work will soon begin. He recently completed an auditorium at Carbondale which required 40,000 tons of Acme plaster. The contract for a \$100,000 high school has just been let at Benton. At Wood River, twenty miles out of St. Louis, a boom of astonishing proportions has struck the town. Six to eight-room residences, mostly of brick, are being erected, but not fast enough to meet the demand. Oil and war munitions is the answer. It is prophesied that at least 200 homes will be built there within the next six months. Three building material yards have been established at that point.

PITTSBURGH MARKET BRISK.

Pittsburgh, July 5.—The fine weather of the past two weeks has helped everybody to get outside work under way. More contracts have been awarded for street and road work in Tri-State territory than in the entire six months previous. Many of these went to Pittsburgh concerns and as a result retail yards here are beginning to get some nice orders. The state road work has not developed in any large amount as yet. This is due partly to the fact that only last week did Governor Brumbaugh appoint a successor to Robert J. Cunningham, state highway commissioner, who died two months ago. Also, there is only available in the city treasury about \$360 per mile for road work this year which makes it necessary to cut down the proposed mileage of new roads considerably and to confine work for the most part to repairs on turn-pikes that were made during the past few years.

A good deal of river and harbor work is coming forward and will be let this summer. The building situation is a trifle more satisfactory than last month for the reason that prices are breaking a little on the general line of builders' supplies.

Builders are inclined to believe that the constant turning down of bids and the resultant lowering of prices will develop considerable building for letting late in the summer. Yards, however, and retailers everywhere are buying only for current needs. They prefer not to stock up until the situation is a little clearer and many of them believe that there will be lower prices prevailing before September, as there is a considerable number of business men who are looking for a sharp break in financial and industrial affairs as soon as the European war is over. Retail yards in this city are carrying fair stocks and are getting busier in the way of deliveries than they have been for some time.

MEMPHIS MARKET FIRM.

Memphis, Tenn., July 3.—Some of the leading material firms here state that the July market will hold its own and that local conditions are picking up nicely. A great deal of rain in June affected outdoor operations somewhat. Labor and cars are a little scarce in many directions, but building figures are quite normal and out-of-town business is said to be a little better than usual.

Mr. Thomas, of the Fischer Lime & Cement Co., said: "The building material market seems to hold its strength, with demand and prices quite firm and outlook good. Neighboring territory trade is the same way and the summer situation bids fair to be maintained in every respect."

The John A. Denie's Sons Co. reports an improvement in out-of-town trade, Memphis building moderately active during June, a good outlook for July and autumn prospects bright, also that prices on

cement, lime and other leading supplies hold strong. They have made some improvements at their suburban yards and with other firms are developing some plans to further trade activity during the summer months.

A. J. Cook & Co., Inc., are featuring prepared roofing, drain tile, plaster, lime and building materials at their yard in southeast Memphis.

A scheme for more friendly relations with towns in neighboring territory is being worked out by the building trades committee of the B. M. C. Chamber of Commerce. The next places to be visited will be Forrest City, Ark., and Tupelo, Miss. Clarence Devoy is chairman of the committee.

CONDITIONS IN WESTERN CANADA.

Winnipeg, June 30.—Business in the retail building supply trade is slower than is usual for this time of the year owing to abnormally wet weather. At Edmonton, Alta., business has been paralyzed owing to flood conditions; at Fort Frances, Ont., a serious flood has threatened the business section for some time; at Winnipeg normal conditions prevail again, but the continued wet weather has retarded building operations.

There is a good demand in the country for cement for the erection of farm buildings, while in other lines there is a good trade being done. Collections are coming in much better now than the farmers are through with seeding operations. The retail builders supply men in the prairie provinces look for a large business in July and August. The farmers have lots of money and they are showing a tendency to investing it in new buildings, of a much more up-to-date character than they have been erecting in the past. Considerable of the municipalities are constructing new roads and call for the erection of concrete bridges which cost in the neighborhood of \$5,000.

Winnipeg is to have a new industry. The Western Canada Marble & Tile Co., Ltd., has purchased the old property of the Lewis Carriage Co., on Portage avenue for \$100,000. The company is using the old building but has almost completed a finishing plant 175 by fifty-two feet in size.

The London Concrete Machinery Co. has secured the contract to supply the Winnipeg Aqueduct Construction Co. with six centrifugal pumps connected with the standard gasoline engine to be used on the Winnipeg Water Scheme.

EUROPEAN RECONSTRUCTION WORK PLANNED.

New York, July 1.—Combination of the largest war relief organizations in the country for war relief in Europe and for reconstruction after the war, starting with minimum resources of \$10,000,000, was announced today at the offices of the American committee representing the International Construction League. This league has been organized to effect this combination, and plans, it is announced, to rehabilitate the devastated parts of Europe, to rebuild towns, and furnish homeless peasants and farmers with homes on an enormous scale.

The American committee of the league has as its honorary president Charles W. Eliot, it was stated, and includes in its membership five state governors, four United States senators, ten heads of American universities and colleges, editors, bankers, and members of relief organizations.

Mr. Samuel H. Hurst, a well-known builders' supply man of Toronto, has joined the Two Hundred and Fourth Canadian Battalion for overseas service, as a private. He leaves a well-established business. He was presented with a wrist watch by his associates in the Builders' Supply Section of the Retail Merchants' Association, Toronto branch. The presentation was made by Mr. John Maloney, president of the section.

SMALL JOBS PREDOMINATE.

Northampton, Mass., July 3.—Small jobs are the rule in this city just now, the contractors having settled into the midsummer stride on operations under way, consisting mainly of garages, dwellings and some store alterations in the central section. J. A. Sullivan, dealer in hardware, cement and masons' supplies, said trade activity was about as to be expected at this season under the conditions of campaign year and the draft on attention to the military affairs of the country. He also said many in the city had made good use of the period of low prices in cement and materials some months back, as accounting for a present slackness.

WORK STARTED ON EASTERN EXPOSITION.

Springfield, Mass., July 3.—Foremost in the building line and prominent in all the business of Springfield just now is the operations for the Eastern States Exposition on which several new contracts have just been let. Daniel O'Connell's Sons, of Holyoke, will build about one-half mile of dike to join the ends of the new work behind the exposition park. Besides completing the diking work, and replacing one dike which has been the barrier against early season floods of the Connecticut river for many years, it will guarantee protection to both the exposition property and the town of West Springfield, the contract also includes the building and installation of gatehouses and the gates for the control of the flow of the water in and out of the artificial lagoon which will be used for exposition water sports.

General building operations in the city for June nearly doubled in total cost those for the same month last year, according to the city statistical report, and the total in building operations for the first half of the year exceeds the figure for the same period in 1915 by nearly \$600,000. The total for the sixth month in building permits is \$3,854,886, June having added \$989,918. Evidence of this building investment is to be found on all sides.

John B. Driscoll, manager of Springfield Contractors' Supply Co., reports active demand for building materials, an acceptance in general of market conditions as they are and little disposition to await for any change in prices.

The local labor situation is not any too good, especially in the unskilled section. Since the shovelers' strike troubles in May contractors have advanced pay to \$2.50 a day. While the contractors are willing enough to pay these prices, they want work for the money, yet they have daily troubles in getting efficiency at the higher rate. Some of the walking delegates have been reduced to the ranks and have taken up shovels themselves.

NEW CEMENT PRODUCTS VENTURES.

The Krueger Cement Block Co., Milwaukee, Wis.; capital, \$12,000; incorporators, Gustav Krueger, Sr., George Krueger, and G. A. Krueger.

The Abram Cement Silo and Construction Co., Dugger, Ind.; capital, \$10,000; to construct reinforced concrete silos, bridges, drain pipes, etc.; directors, Ira M. Abram, Charles Mason, Michael Yung, Merrel M. Lisher, Charles H. Heaton.

Hopewell Brick Corporation, Roanoke, Va.; capital, \$25,000; to establish plant to manufacture cement bricks and other cement products; incorporators, Harold Shemwell, president; Rankin Mason, vice-president; Hugh K. Browning, secretary and manager.

C. F. Hess, Point Pleasant, W. Va., will rebuild the cement plant recently destroyed by fire.

Pekin Concrete Products Co., Pekin, Ill.; capital, \$15,000; incorporators, J. Leonard Taylor, George P. Krell and Adam Saal.

GF

YOUNGSTOWN, OHIO.

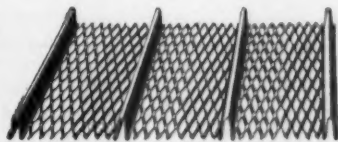
Trade Mark

Reg. U. S. Pat. Off.

Dealer Policy

First—to provide a complete line of fireproof building materials and waterproofings. **Second**—to protect the dealer in the sale of GF Products. **Third**—to help him sell in every way we can.

As a result, leading dealers are yearly increasing their business and profit on the GF Line. Where territory is still open we will be glad to send details of the profitable GF Dealership. Better write now.



Self-Sentering

for roofs, floors, curtain walls, partitions in every class of building. Acts as form and reinforcement or as lath and stud. Saves time, labor and material.

GF
Steel
Tile

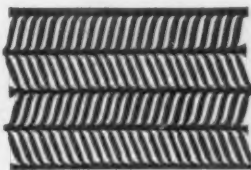


to 30 feet. Give light weight, economical floors.

Steel forms for T-beams, concrete floors, adaptable to any type of building, good for spans up

Herringbone Lath

The stiffest metal lath made. Will insure permanence and satisfaction on all classes of plaster work—particularly good for stucco jobs. Permits 16" to 20" stud spacing without sagging.



Also

Trussit and Expanded Metal Reinforcements, GF Cold Rolled Channels, Corner Beads, Wall Ties, etc., and a complete line of GF Waterproofings, Dampproofings and Technical Paints

Write for Dealer Information

The General Fireproofing Co.

1707 Logan Avenue

Youngstown, Ohio

Reducing the Cost of Handling Rock or Gravel

Power—Belt Wear—Operating Attention—Grease

These items have all been reduced by the dust proof ball bearings of the Unit Carrier. These carriers will run thru an entire season with no attention whatever—in a number of instances they have run two and even three seasons. Note also the even distribution of the load. This ideal operating condition is secured by the use of an "S-A" Automatic Feeder. "S-A" engineers are at your service in the design of cost-cutting conveying systems. Correspondence or consultation invited.



STEPHENS-ADAMSON MFG.CO.

AURORA, ILLINOIS

GRANITE

Crushed to proper sizes

For all kinds of paving and construction work. Its use insures durable, lasting qualities, and is a distinct economy.

Granite Screenings

Clean and sharp, in sizes and different colors, for concrete, paving and surfacing walks. Increase the satisfaction of your trade by handling Granite Screenings.

Granite Paving Blocks

Standard and Special sizes to meet all conditions.

Hardest and most durable Granite quarried

Large stocks—prompt shipments—many quarries—water and rail shipments.

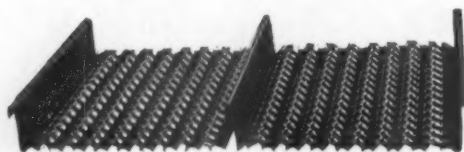
Granite Saves Contractors from Loss

Officials from Criticism and gives one hundred cents of value for every dollar expended.

WISCONSIN GRANITE CO.

Main Office: Lumber Exchange, Chicago, Illinois

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



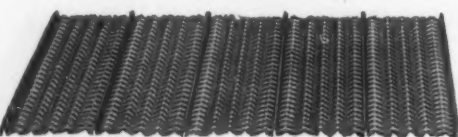
1 1/2-in. Hy-Rib. Very rigid. For heavy loads and wide spans.



15/16-in. Hy-Rib for floors and roofs without forms—sidings, partitions and ceilings without channels.



13/16-in. Hy-Rib. Widely used in partitions, sidings and ceilings.



5/8-in. Hy-Rib Lath used as self-furring lath and in partitions, ceilings, etc., for stud spacings 24 in. to 36 in.

Bigger Business, More Profits

The Complete Line of Best Products

Hy-Rib in four depths from 3/4 to 1 1/2 in. Each in various gauges. Rib Lath, a most economical lath in three types and various gauges. Diamond Lath in two types and various gauges.

Kahn Pressed Steel Studs include channels from 3/4 to 2 in. in size, studs with prongs from 2 to 12 in. and hollow studs in various sizes.

Steel Corner Beads for the protection of plastered corners, in four types. Metal Base Screeds for use between cement base and plaster are supplied in three types.

Inserts for use in concrete slabs, beams or columns, for attaching fixtures, shaft hangers, etc., are furnished in three types.

Dealers increase sales by handling a line that is known for its high quality and the service back of it.

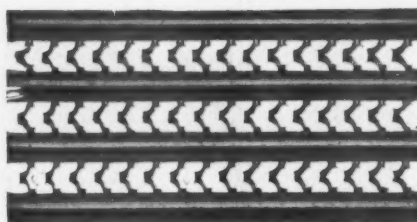
Channels without prongs, 1/2, 1, 1 1/2, 2 inches.



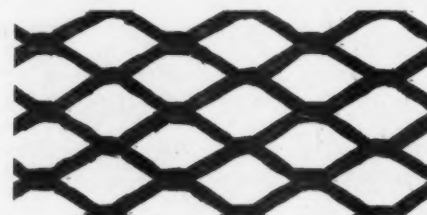
Trussed Concrete Steel Co.
Dept. H 26
Youngstown, O.
REPRESENTATIVES IN PRINCIPAL CITIES



Kahn pressed steel channel studs, 3, 4, 5, 6 inches; also 2 inches without turned flange



Beaded Plate Rib Lath permits two-coat work instead of three.



Diamond lath in two types and various gauges.

The Simplest Road Surfacing Process Known

Glutrin Road Binder is applied from an ordinary water sprinkler. It is not an oil or a tar and requires no heating.

GLUTRIN BOUND ROADS

Maintain a firm, durable surface for every month in the year



GLUTRIN

The Glutrin Paving Co.



View of Woodland Ave., Columbus, Ohio, Constructed 1914. Photograph November, 1914

Hartmann Building
Columbus, Ohio

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

Our Remarkable Growth Rests on the Foundations of Merit, Service and Dealer Loyalty

Merit, service, and dealer loyalty have made us the world's largest exclusive manufacturers of waterproofings, dampproofings, technical coatings, and floor hardeners. This growth has been accomplished in seven years' time and is striking testimony to the quality of each factor contributing to our success.

Merit and service have caused Trus-Con products to be specified on the most important operations throughout the country and to be universally used in general building construction. Architects and engineers know by experience that the name Trus-Con on any product is an insurance of maximum efficiency in results.

Dealer loyalty has added to the tremendous growth of the Trus-Con Laboratories for dealers have recognized that Trus-Con dealer co-operation is as complete as Trus-Con value in a product. Recognizing this, they have reciprocated by dealer loyalty and unbounded enthusiasm. Dealers realize that the Trus-Con line, the one complete line, means increased business and larger profits for themselves. In addition to the heavy demand for Trus-Con materials, dealers among many other things receive

Constant co-operation of branch offices in closing prospects and architectural calling.

Publicity in leading magazines and trade journals.

The furnishing of live prospects.

Educational literature to builders.

Unusual dealers' aids.

Special products for special purposes.

With its twenty-five branch offices, every dealer is assured of the close personal attention of a Trus-Con specialist.

There remain only a few openings for dealers. If interested, it will be necessary for you to write at once.

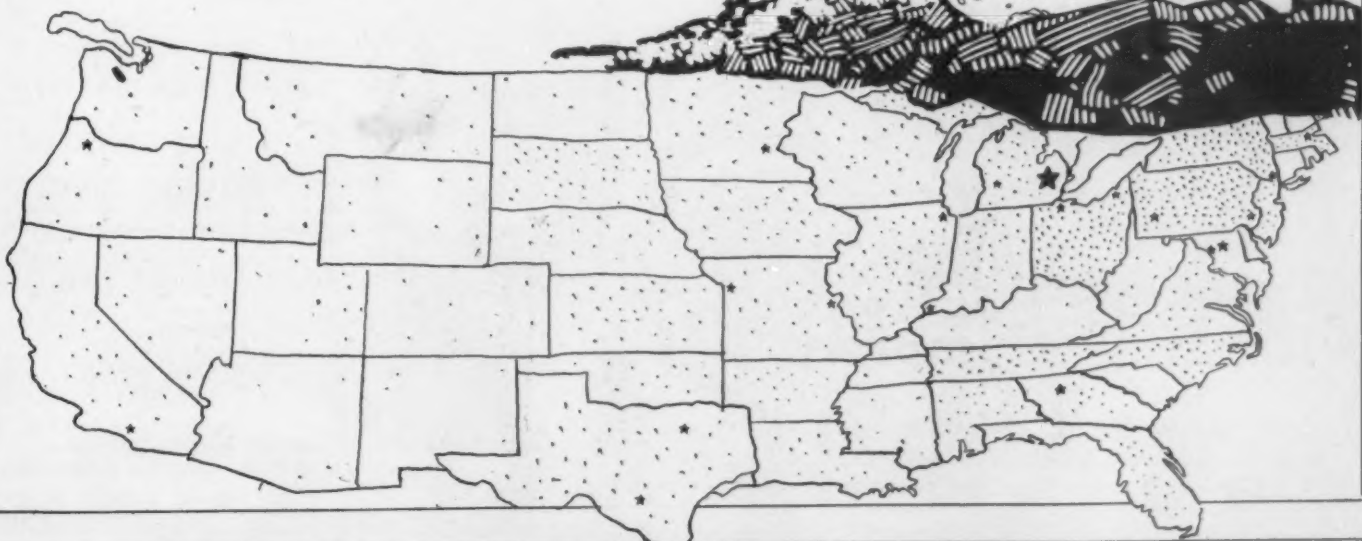
The Trus-Con Laboratories

Inventors and Manufacturers

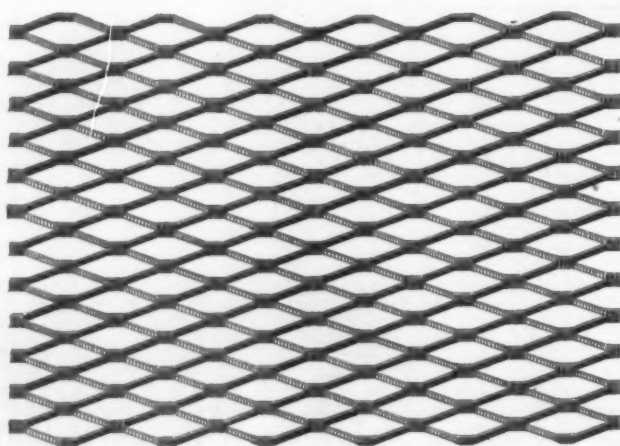
Waterproofings, Dampproofings, Technical Coatings, Floor Hardeners

DETROIT, MICHIGAN

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Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



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Sheets—24 inches by 96 inches.
Nine sheets to the bundle.
Sixteen square yards to the bundle.
Manufactured in painted or
galvanized.

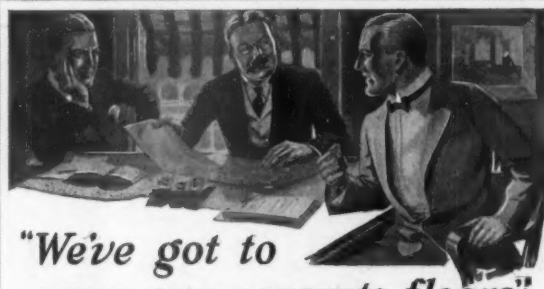
Weight in painted materials as
follows:—

No. 27 gauge . . . 2.3 lbs.
No. 26 gauge . . . 2.5 lbs.
No. 25 gauge . . . 3 lbs.
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Galvanized weights are a trifle heavier.
Prompt shipment from stock at all times.

Sykes Metal Lath & Roofing Company

508 River Road, Warren, Ohio
Also manufacturers of Sykes Expanded Metal Cup Lath
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save our concrete floors"**

"Our cement floors are comparatively new and they are the best floors we could lay down, but the surface is already sanding; water is getting spilled on them and they are soaking up oil. I tell you, gentlemen, we have got to save them."

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Pat. as to Portland Cement 2-27-06.

will keep cement floors wearproof, waterproof and oilproof.
Scuffed off dust won't float in the air to ruin merchandise, get into bearings and cause electric motors to spark.
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"The Master Plaster"

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SURE

United States Gypsum Co.
205 W. Monroe St. CHICAGO

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

CONCRETE

Instructors Taught Concrete Facts

Recently there gathered in Chicago a group of about 200 young men and women from different sections of the United States. They were drawn to the metropolis of the west by the power of an idea, an idea which drew also a group of advanced educators, great manufacturers, trained engineers and, in one significant instance, a world renowned sculptor.

The occasion of this meeting was the first Short Course in Concrete for Manual Training and Vocational Teachers. It was held at Lewis Institute, June 26 to July 1, under the auspices of the extension division of the Portland Cement Association, 111 West Washington street, Chicago. Both interest and attendance were beyond expectations and there is every reason to believe that this event—the first of its kind—will mark the beginning of a greatly increased interest in the work which it is intended to promote.

As each of the 200 men and women registered on Monday morning they had the pleasure of meeting personally A. J. R. Curtis, director of the extension division of the Portland Cement Association, who



SECTION SEVEN, ALL LADIES, WHO DID THEIR OWN MIXING, PLACING, TAMPING AND FINISHING.

with his numerous and well-qualified assistants made them feel at home and caused them to realize that in addition to a week of learning, a spirit of good fellowship would be in existence during the entire course.

A "get-together" luncheon was held in Lewis institute gymnasium on Monday noon and a welcoming address was delivered by Professor John D. Shoop, superintendent of the Chicago Public schools, who also spoke on behalf of the Chicago Chamber of Commerce. Mr. Curtis presided at the luncheon and in addition to calling upon Mr. Shoop introduced the teachers to Director George N. Carman of Lewis Institute, who reinforced the welcome of Professor Shoop, and A. J. Whipple, sales manager of the Marquette Cement Manufacturing Co., who, in behalf of the manufacturers of Portland cement, expressed his pleasure on seeing so many men and women interested in the study of concrete. He stated that the manufacturers appreciate the work done in promoting the use of concrete and thereby increasing the use of cement.

Immediately following the luncheon, Professor D. A. Abrams, in charge of the Structural Materials Research Laboratory of Lewis Institute, gave an historical account of the manufacture of Portland cement, stating in part that there are cement mills located in twenty-five states and that no two mills have ever been operated in which the process has been exactly identical. With the aid of lantern slides he took his audience through the various processes of securing the raw material, burning and pulverizing the clinker, sacking and shipping of the cement. He gave the following chemical analysis of Portland cement which was copied in every notebook.

CHEMICAL ANALYSIS OF PORTLAND CEMENT.				
PRINCIPAL COMPOUND.		PROPORTION BY WEIGHT.		
Formula.	Name.	Range.	Average.	
CaO	Lime	60-65	62.5	
SiO ₂	Silica	19-24	21.7	
Al ₂ O ₃	Alumina	5-10	7.5	
Fe ₂ O ₃	Ferous oxide	2-5	3.3	
MgO	Magnesia	1-4	1.9	
SO ₃	Sulphur oxide.	5-2	1.2	
Unclassed				

A lecture on concrete materials by Prof. Abrams followed the talk on Portland cement, in connection with which the association distributed pamphlets containing information relative to concrete aggregates. The contents of this pamphlet are printed in another column.

On Monday evening C. S. Fletcher, manager of the sack bureau of the Universal Portland Cement Co., gave an interesting talk on "Cement Storage and Package Problems."

Mr. Curtis was on hand early Tuesday morning with a lot of information relative to articles on "Concrete in Manual Training." The subject of this hour's discourse was "Note Book Data," and Mr. Curtis demonstrated that the extension department is acquainted with all literature pertaining to concrete work in connection with manual training courses in schools. He concluded his remarks by explaining the scope of work of the extension bureau.

H. Colin Campbell, director of the editorial bureau of the Portland Cement Association, spoke for almost two hours on "Proportioning and Mixing." He went into detail on the proper selection of the cement, sand, pebbles, broken stone and the water to be used in the making of concrete and touched upon the subject of voids and the method of determining them. Mr. Campbell's address will be printed in a later issue of ROCK PRODUCTS AND BUILDING MATERIALS.

On Wednesday N. T. Ashkins, of the Cement Products Bureau, read a paper by Mr. C. M. Wood, manager of that bureau on "Hardening Concrete Products." This paper will also be printed in full in a later issue.

On Tuesday evening "A Concrete Romance" was shown in moving pictures and B. H. Piepmeier, maintenance engineer of the Illinois Highway Commission gave an illustrated address on "Concrete Highways."

On Thursday evening the teachers were guests of the association at an informal dinner at the Sherman hotel. Dr. Edwin Herbert Lewis, of Lewis Institute, made an excellent toastmaster. Short inspirational addresses were delivered by H. E. Miles, president of the State Industrial Educational Bureau of Wisconsin, and Lorado Taft, the sculptor. Mr. Miles urged a

still broader training of the hand to do practical things and the renowned sculptor gave a hint of the architectural beauties which are yet to come through the adaptation of concrete.

On Friday evening Professor Frederick Russell Clark, a lecturer of the extension division, gave a travelogue on "The Stone of Baalbeck," which was illustrated with slides and motion pictures.

In addition to these interesting features, the teachers were instructed in the following subjects:

Practical Calculations, by W. F. Beyer, designing engineer of the Portland Cement Association.

Tools and equipment for the Concrete Course, by



A SECTION OF THE TEACHERS AT WORK MAKING CONCRETE GARDEN FURNITURE.

C. M. Roefer, manual training demonstrator of the extension division.

Forms for Monolithic Construction, by E. Z. Cornwell, manual training demonstrator of the extension division.

Wooden Molds for Small Objects, by George A. Ross, instructor in charge of wood work, Lewis Institute.

Concreting in Cold Weather, by Mr. Campbell.

Concreting Demonstration, by R. H. Williams, manual training demonstrator, extension division.

Concrete Surface Finish, by Mr. Cornwell and A. J. Race of the Cement Products Exhibition Co.

Water Tight Concrete and Repair of Leaky Tanks and Cisterns, by J. E. Freeman of the technical division.

Plain Slab and Floor Work, by J. C. Donaldson, field engineer of the extension division.

Floor Slab Demonstration, by H. S. Young, structural materials research laboratory, Lewis Institute.



MANUAL TRAINING TEACHERS' GUESTS OF PORTLAND CEMENT ASSOCIATION AT BANQUET, SHERMAN HOTEL, CHICAGO, JUNE 29.

Plaster and Metal Mold Work, by Mr. Williams.

On Thursday the group of teachers were divided into parties for the construction of concrete of a number of small objects. Each of the men donned overalls and the ladies protected their dresses with large aprons while the process of mixing and molding was engaged in. Garden furniture of many descriptions including sun dials, benches, flower urns, and fence posts were made. On Friday the forms were removed from this work and on Saturday an opportunity was given to complete the unfinished work.

On Wednesday, a luncheon was enjoyed with the Association of Commerce at the LaSalle hotel, at which Mr. Harris, retiring president of the Northwestern University, spoke on training the hand to work with the brain.

At the close of the course both the teachers and members of the Portland Cement Association expressed themselves as highly satisfied with the results of the week's work. The teachers gave a vote of thanks to Mr. Curtis and the association for the arduous manner in which the corps of workers devoted their entire time and attention to the purpose of investing the student-teachers with as complete a knowledge of concrete construction as it is possible to give in a one week's course.

Wear Tests of Concrete.

Professor D. A. Abrams of Lewis Institute, Chicago, presented a paper at the recent annual meeting of the American Society for Testing Materials in which he describes very conclusive and practical methods for testing the wearing quality of concrete when used for the wearing surface of roads.

The method of procedure consists of making a large number of test pieces, using the proposed proportions of Portland cement and aggregates as is designed to use in the road material. Several different mixtures and proportions may be made up in order to get a comparison of the wear. In fact, all available aggregate materials in the vicinity of the road to be built can be represented by test pieces in various combinations so as to compare the wear of the various aggregates before using.

For test pieces, Prof. Abrams uses concrete blocks eight inches square and five inches thick. As the blocks weigh approximately thirty pounds each the test is severe enough to represent very well the wear of road surface service.

The Talbot-Jones rattler used for this test consists of forming a drum of the test pieces using wooden wedges between each pair of pieces to give the approximate circle. When so "set up" the drum is firmly clamped together by means of steel bands fastened with drawhead bolts. Ten specimens of concrete are used in this way at one time. Two hundred pounds of cast iron spheres are placed inside of the drum, which is closed by means of clamping devices, and the drum made to spin so that the cast iron balls strike, rub, roll and grind together against the inside surface of all the blocks forming the drum.

Prof. Abrams claims for the method so developed the following advantages:

1. The concrete is subjected to a treatment which approximates that of service.
2. The test piece is of usual form and of sufficient size that representative concrete can be obtained.
3. The test pieces are convenient to make, store and handle, and require a relatively small amount of concrete.
4. The cost of tests is not excessive.
5. The machine used is found in numerous testing laboratories.
6. The wearing action takes place on the top or finished surface of the concrete. This makes it possible to study the effect of various surface treatments or finishes.
7. Several tests may be made at the same time, thus enabling more representative results to be obtained.

8. Tests may be made on sections of concrete cut from roads which have been in service.

9. Other paving materials such as brick, granite blocks, etc., may be tested in the same way as the concrete.

For Better Specifications.

At the recent annual meeting of the American Society for Testing Materials, Cloyd M. Chapman presented a paper recommending a more sensible form for wording the specification of aggregates in concrete mixtures.

Taking issue with the arbitrary proportions so often set down as if definitely describing something tangible, the author declared:

"To be generally acceptable specifications for concrete aggregates should fulfill two requirements, namely: (1) they should insure the production of suitable concrete if the aggregates are properly used; and (2) they should permit the use of materials found in the vicinity of the work, if such materials are capable of producing concrete of the required quality.

"The present method of specifying may insure the quality of the material, but it does not permit the use of a wide choice of aggregates from which first-class concrete may be made.

"It is quite possible to write specifications for sand and stone which will answer the purpose in New York, others for Pittsburgh, and still others for New Orleans, but they will all differ from each other if they are to be met by the local products."

As soon as the engineer learns to specify aggregate materials in accordance with the results required when tested under specified and standardized conditions, it will be possible not only to properly safeguard the product but to permit the use of such materials as are available in each locality.

Specifications for aggregate materials might take some such form as the following, in which the figures are purely arbitrary and in no sense proposed as standard:

"The materials used shall be of such quality, and shall be used in such proportions as to produce a concrete which shall show a compressive strength of 2,500 (or 2,000 or 1,500) pounds per square inch at the age of twenty-eight days, when tested in accordance with the standard methods of testing."

Taking this form of specification for the aggregates the engineer can provide for the values required to be produced in the work. Then such a combination of crushed rock, sand, etc., of whatever individual description, may be used, provided the result specified can be so attained.

Sand and crushed rock, when derived from the same source of supply, do not vary much as to quality, and when once established by tests it is comparatively simple to keep a check upon the deliveries.

Perhaps no paper presented at the annual meeting of the great technical society contained a better recommendation for the improvement of practice in the concrete industry. That time honored, unsystematic way of arbitrarily assuming values for five-eighths of the entire volume of concrete masses has been the root of immeasurable evils. To it can properly be charged a large proportion of the partial failures of concrete. No engineer has a right to assume that his arbitrary formulae will produce the quality of concrete he requires. He must know that aggregate materials are the cheapest commodities known in each and every market, and that no two natural deposits are alike. In fact, the variations are enormous. If not acquainted with these things, no man has a right to prepare specifications for concrete aggregates.

The quality specifications recommended in Mr. Chapman's paper is the first practical and systematic plan offered by which known and dependable concrete can be produced without the usual hubbub, misunderstandings and expensive rejections of materials that all are familiar with.

CONCRETE NOTES OF CONCRETE FIELD.

The Louisville & Nashville Railroad Co. is preparing to erect three concrete coaling stations to be built at DeCoursey, Hazard and Ravenna, Ky. Contracts have been let for the coal handling equipment.

The Koehring Machine Co., manufacturers of concrete mixers, Milwaukee, Wis., has filed suit in the Federal district court in this city against the Oshkosh Manufacturing Co., of Oshkosh, Wis., alleging patent infringement on a concrete mixer.

The Eagle River Cement Block Construction Co., of Eagle River, Wis., which was recently organized by Messrs. Smith and Ohlsen, is meeting with warranted success. The plant is located on Railroad street in the north end of town and has a capacity of two hundred blocks every eight hours. Although the firm has been producing for only a little over a month, it has already extended its activities into other cities.

"Concrete for Permanence," is the motto of Julius Sorenson of Racine, Wis., in advertising cement blocks "that will last a lifetime." Mr. Sorenson has a plant at Kinzie and Belmont avenues, where his offices are also located. The equipment is quite complete for the manufacture of all sizes and shapes of blocks. The new Holmes & Pollard garage on Washington avenue, the Model laundry on Sixth street, the Sys residence at High and North Wisconsin streets and the McLain and Lawton apartments at Sixteenth street and Park avenue are some of the recent structures that will testify to Mr. Sorenson's ability in concrete construction.

Concrete sewer pipe and reinforced concrete tunnels play an important part in the big sewerage jobs which are under construction in Milwaukee, Wis. The John F. Casey Co., Pittsburgh, Pa., recently secured a \$470,000 contract for the West side low level sewer which will be principally concrete, including a six-foot siphon under the river.

One of the big concrete jobs to be awarded within a few days at Shawano, Wis., by the City Electric Light & Water Commission, will call for a concrete dam, spill way, flumes, etc. Among the requirements are 3,500 cubic yards concrete, 45,000 common brick, 26,000 colonial sand mould brick, 60,000 tile, five by eight by twelve inches, 4,000 barrels sack cement, and 600 cords field rock furnished by the city with crusher.

CONCRETE TO THE RESCUE.

The Pan Handle division of the Pennsylvania Railroad Co. is arranging to do the biggest job of dental work on a side hill ever performed in western Pennsylvania. It will put in a concrete heel from the level of its right-of-way on Pittsburgh's south side to the bottom of the ledge of rocks on Mount Washington which continue to the top of their touring hill. The railroad has had constant trouble for many years with the foundation of clay and loose stone which extends up to a height of about thirty feet and above which there is solid rock. The concrete heel will make a substantial entrance to its rock foundation.

TEN MILES OF CONCRETE PIPE.

Reinforced concrete will be used in preference to cast iron pipe for the water pipe line of the Greater Winnipeg Water District on a ten-mile stretch from Deacon to the Red River. Originally steel pipe was to have been used for this stretch of line. Considerations of economy and durability suggested a change either to cast iron or to reinforced concrete. N. H. Ruttan, late city engineer of Winnipeg, chairman for the consulting engineers, making the report into the state of the cracked aqueduct, reported that while cast iron would be satisfactory from a structural point of view, its extra cost over concrete would not be warranted.

Concrete Aggregates*

Concrete Aggregates: In a concrete mixture, the sand and pebbles or broken stone or similar materials used instead of them are called "aggregates." Sand or similar fine material, such as stone screenings below one-fourth inch in greatest dimension, is usually referred to as "fine aggregate" and is defined as "any suitable material that will pass a sieve having four meshes to the linear inch." Therefore, stone screenings or similar material meeting with the above specifications used in a concrete mixture in place of sand, would be called fine aggregate. "Coarse aggregate" is the term used to refer to the pebbles or broken stone, usually defined as material that will not pass a sieve having four meshes to the linear inch. Generally a certain maximum size is specified for the pebbles or broken stone, depending upon the kind of construction for which the concrete is to be used. A maximum of one and one-half inches is perhaps the most common limitation of size for pebbles or broken stone.

General Requirements for Aggregates: Many people believe that the quality of concrete depends entirely upon the Portland cement. Good Portland cement is necessary if good concrete is to result; nevertheless, the quality of concrete depends in a great degree upon the sand and pebbles or broken stone that is used as aggregate. The suitability of any aggregate is determined in accordance with:

- (1) Its hardness or crushing strength.
- (2) Its durability as regards resistance to frost action and other weather influences, resistance to wear and similar action that would tend to destroy it.
- (3) The relative sizes of particles, that is, the grading from fine to coarse.
- (4) Its cleanliness, or the absence of foreign materials.
- (5) The shape, and nature of the surface of the particles.

Hardness: The hardness of sand, pebbles or broken stone used in concrete increases in importance as the concrete grows older. Because of the rounded surface of pebbles, concrete in which pebbles are used as coarse aggregate may not be so strong at the age of one month as concrete in which relatively soft broken stone was used. When one year old, however, the concrete in which pebbles were used may exceed in strength that in which broken stone was used, because as the cement progressively hardens and develops a firmer bond, the resistance of aggregate to stress or strains, such as the bearing of loads or strains which tend to crush or pull it apart, becomes more important. Sand and pebbles or broken stone should be strong enough to offer at least as great a resistance to crushing as does the cement after it has reached a maximum hardness.

Value of Different Rocks: Different rocks of the same class or origin vary so much in texture and strength that it is not possible to give definitely their relative value as aggregate. This is determined largely by actual strength, the strongest concrete usually being that in which the hardest stone is used if the sand and cement meet necessary requirements.

Uniform grading of the sand or of the pebbles or broken stone, from the smallest permissible particles to the allowable maximum, largely determines the density of the mass, which in turn largely determines the quality of the concrete. An aggregate so graded that the coarser particles predominate, produces a denser and stronger concrete or mortar. A certain quantity of fine grains is valuable and necessary to reduce voids or air spaces to a minimum, but an excess of such material has a tendency to reduce considerably the strength of the resulting concrete.

Weights and Voids: A high unit weight of a material and a correspondingly low percentage of voids or air spaces indicate coarseness and good grading of particles. These indications, however, are simply general guides and should not be taken as positive indications of the true relative value of a material. This is especially true of sand, in which the percentage of air spaces increases and the weight decreases with the presence of moisture up to about six per cent.

Maximum Size: Within reasonable limits the strength of concrete increases with the size of the pebbles or broken stone. For some mass concrete, a practical maximum size is two and one-half or three inches. In thin reinforced sections, such as floors and walls, one and one-fourth or one and one-half inches is generally the maximum, as aggregate particles must not be so large as to prevent thorough working of the concrete around the reinforcing.

Cleanliness: There have been many confusing opinions advanced as to the effect of clay, loam and similar foreign material in concrete mixtures. Engineers are, however, fairly in accord on certain conclusions. If clay exists as a coating on the particles of aggregate, it is undoubtedly injurious, because it will prevent a proper adhesion or bond of the cement. Laboratory tests have shown that the presence of from five to ten per cent of clay may not be objectionable, but as laboratory results cannot always nor generally be obtained in field work, it is much safer not to use sand and pebbles containing even a small percentage of clay or other foreign matter. If such matter is present the sand and pebbles should be washed.

A coating of vegetable matter on the sand grains appears not only to prevent the cement from adhering to the surface of the particles but often affects it chemically. A quantity of vegetable matter so small as to be impossible of detection by the eye, may prevent the mortar from ever acquiring any considerable strength. Concrete made with such sand usually hardens slowly. Sometimes it never hardens sufficiently to withstand its intended use. Other impurities, such as acids, alkalis or oils in the sand or mixing water also cause trouble.

Shape of Particles: The shape of sand, pebbles, or broken stone particles, influences the strength of mortar or concrete. Flat particles pack loosely and are inferior generally to those with cubical fracture.

DEMONSTRATES FIREPROOFNESS OF CONCRETE.

Concrete buildings, fortified with steam fire protection, have been proven an ideal form of construction for use in erecting dry cleaning plants. Following an argument between Louisville, Ky., authorities, the Swiss Cleaners & Dyers, operators of perhaps the finest plant of its kind in the South, offered to produce a demonstration of its efficient fire fighting system. W. J. O'Sullivan, the city building inspector, Judge Boldrick, of the Ordinance court, a representative of the Kentucky Actuarial Bureau, the fire underwriters' organizations, and a number of prominent business men and officials, made a trip to the cleaning plant. In one of the concrete cleaning rooms two washing machines were each filled with 160 gallons of gasoline. A ten-gallon open tub was filled and placed in the middle of the floor. Two ten-gallon cans were emptied at each end of the room, which is about eight by twelve by ten feet. A match was thrown into the room, the fuse wire on the counterweights let go with the heat, and the big door automatically closed. A rapid steam valve was jerked open by simply pulling a lever, and in one minute and one second the door was opened. Where a roaring furnace had been a minute ago there was no sign of fire, and even the belts on the machines were unscorched and still operating. Machines

in the two adjoining rooms were operating on the same line shaft during the demonstration.

The local authorities were satisfied with the experiment. Dr. Mechling, head of the company, called attention to the fact that in constructing this plant, everything was arranged to close tightly except the overhead ventilators, which allow the pressure from the fire to escape, thereby keeping the walls from going out. Without draft the ventilators are practical, but all other openings must be closed tightly. The steam pipe is one and one-half inches in diameter, with three tees which open within four inches of the ceiling. The steam first hits the ceiling and blankets the entire room.

NEW MEXICO HAS CONCRETE "RAILROAD."

Tucumcari, N. M., July 3.—Plans are well advanced for the construction of an automobile "railroad" that is to run between Tucumcari and Clovis, N. M., a distance of eighty-eight miles. Concrete rails of a type invented by James F. O'Rourke of Tucumcari will be used. The unique road will be twelve feet, four inches wide, so as to permit the passing of automobiles running in opposite directions. The rails for the double line will be three in number. The center one will be eighteen inches in width and so grooved that the passing cars will keep their respective places. The outside rails will each be twelve inches wide and cupped to a depth of about eight inches. The rails will be poured upon the ground and in that manner the track will be made of continuous and unbroken length. Midway between the termini a repair station and shops will be built. Every five miles a concrete spur track will extend from the main line and at these places a telephone booth will be located so that assistance can be summoned should a car require mechanical attention. It is claimed by Mr. O'Rourke and associates that the total cost of constructing this concrete automobile "railroad" and its equipment with cars for a regular passenger and freight service will not be an excess of \$65,000. The proposed line will traverse a region that is greatly lacking in transportation facilities and which is undergoing rapid agricultural development. The road will be opened for use by private automobiles upon the payment of one cent per mile.

LOCK AND DAM CONTRACT SOLD.

Judge Walter Evans, of the United States District Court, recently ratified the sale of the contract and equipment for Lock and Dam No. 48, under construction below Henderson, Ky., by the Ohio River Contract Co., to McArthur Bros. Co., of New Jersey, and the Mason & Hanger Co., of West Virginia, for \$200,000, but on condition that the concerns named give suitable security for the sum involved. Motion to make the sale was made by Alex. G. Barret, counsel for the Belknap Hardware & Mfg. Co., one of the creditors; and Charles B. Enlow, receiver for the Ohio River Contract Co. The sale was opposed by Madison J. Bray and Jacob Eichel, treasurer and secretary, respectively, of the Ohio River Contract Co., and G. L. Mesker. The three men entering opposition to the sale are the principal creditors of the contract company which is an Evansville, Ind., corporation. They hold about four-fifths of the claims against the company, totaling in excess of \$1,000,000. It was the contention of the opposition that Receiver Enlow could complete the work and show a profit of about \$430,000 instead of only \$200,000 by selling, but Mr. Enlow stated that he was without funds to go ahead with the work. Maj. John C. Oakes, and other government engineers were called to the stand by the opposition in an effort to prove that a greater profit could be realized by completing the work.

* Printed information furnished attendants at the First Short Course in Concrete for Manual Training and Other Vocational Teachers.

CEMENT

New Specifications Adopted.

The long delayed and much discussed report of committee C-1 was adopted by the American Society for Testing Materials with very slight changes and amendments in the final session of the committee before bringing it before the society in open meeting.

The work of this committee, under Chairman George F. Swain and Secretary Richard L. Humphrey, has been in preparation for several years. At the last annual meeting the whole report was withdrawn for the sake of harmony, so that another year of deliberation was taken to get the whole important subject worked into more acceptable shape. Co-operating with Committee C-1 was the special committee appointed by the board of direction of the American Society of Civil Engineers and the Government departmental committee. All committees of the American Society for Testing Materials are composed equally of consumers and producers of the particular material under consideration. There was a warm evening session in which Portland cement manufacturers freely expressed their criticisms, led by Col. W. H. Harding, who is always ready to speak a piece of opinion. Mr. Humphrey stood out for the specification as completed by the committee, and Chairman Swain got "het up" during the swift argument. Ernest Ashton was the harmonizer. The result of the lively discussion in committee was a compromise, which supported the report in all essential details and introduced several minor changes in the figures of the specifications. All parties seemed to be satisfied at last, and with harmony restored it was found that all hands were contending for the very same purpose, namely, to make such specifications as will produce the best possible Portland cement in the most practical way.

Fineness requirement was raised to seventy-eight per cent through the No. 200 sieve.

All one-day tests of neat pats were abolished, so that all future tests will come under the seven-day and twenty-eight-day determinations.

Tension test pieces, composed of one part Portland cement and three parts Standard Ottawa sand by weight must develop strength as follows:

Stored one day in moist air and six days in water, 200 pounds minimum.

Stored one day in moist air and twenty-seven days in water, 300 pounds minimum.

In the manufacture of white Portland cement two per cent of sulphuric anhydride is allowed.

These principal features being unanimously agreed upon, the balance of the report met with ready concurrence.

Robert W. Lesley, patriarch of the clan, acted as chairman of the cement section.

Richard L. Humphrey, secretary of the committee, presented the report as revised and corrected, with the following recommendations:

"That the proposed revised specifications for Portland cement be given the title 'American Specifications and Methods of Tests for Portland Cement.' In the judgment of the committee, they are entitled to this distinction because they are the result of several years' work of the special committees representing the board of direction of the American Society of Civil Engineers, the United States Government departmental committee, and committee C-1. It is highly desirable to convey not only to those who use cement in this country, but

also to our export trade, that there is a single uniform American specification for this important product.

"These revised specifications, under the by-laws of the Society, would normally be printed for one year as tentative, and be submitted to letter ballot of the Society in 1917. * * * But the committee recommends these specifications be referred to letter ballot of the Society at once, with the understanding that if adopted they shall become effective Jan. 1, 1917.

"That the proposed Tentative Specifications and Methods of Tests for Compressive Strength of Portland Cement Mortar be received for publication as a tentative standard.

"Nine-tenths of the committee concur in these recommendations."

After a few necessary explanations Mr. Humphrey's motion for adoption of the report was unanimously carried.

W. M. Kinney spoke in explanation of the Proposed Tentative Specifications and Methods of Tests for Compressive Strength of Portland Cement Mortar. He mentioned the importance of taking these tests directly instead of using the co-efficient based upon the tensional tests. Concrete is used exclusively in compression and never in tension. Comparisons demonstrate that the analogy existing between tension and compression values of test pieces is not well sustained—not well enough for the assumption of a co-efficient.

The method of tests recommended is simple, cheap and accurate. They are already in use in many laboratories, and the results so determined are held in high esteem by those who have already become accustomed to the test. As tentative specifications and methods, the whole matter will be open for criticism, comparison and discussion until Jan. 1, 1917, and all such communications should be directed to Richard L. Humphrey, secretary, Harrison Building, Philadelphia, Pa.

Mr. Kinney's motion for adoption, after some discussion and further explanation, was adopted without any nays.

This improved and altogether practical method of testing the compressive strength of Portland cement mortar is in line with the demands of users of cement often voiced in these columns. It has been known for years outside of the circle of official testing laboratories that the calculation of compressive strength from tensional test results is erratic and of little value in practice.

One difficulty in the matter of compression tests of cement mortars has always been the troubles growing out of the necessary volume of material to be handled in the laboratory to secure parallel conditions with field practice, and again when test pieces of sufficient size taken from batches having great enough volume were made, the size and cost of compression apparatus became enormous. "Compression tubes" have in the past been the only form suggested for consideration. They were found to be very costly if made from a large enough batch and of a size to insure comparative results.

The test piece employed in the new tentative specifications is a cylinder in form—two inches in diameter and four inches long. It is the standard mortar composed of one part Portland cement and three parts standard Ottawa sand by weight, and two minimum test values are proposed as follows:

Stored one day in moist air and six days in water, 1,200 pounds per square inch.

Stored one day in moist air and twenty-seven days in water, 2,000 pounds per square inch.

Description of tools and apparatus and detailed methods of manipulation are included in the tentative specifications.

In practice the abolition of the one-day tests which are most desirable for all jobs not involving a very large amount of Portland cement, throws the whole matter of tests over to the seven-day and twenty-eight-day periods. This means that all of the cement will be tested at the mill before shipment and never at the job when it arrives. Demurrage upon cars taken even at the seven-day period is an expense that no contractor would be expected to stand, and the mills are in no position to undertake any such thing.

In practice cement is used almost as fast as it arrives. To unload from the car to warehouse and move to the job after testing entails another handling with a minimum of thirty-five cents per ton. And from this upward to any cost at all. It is always in the job ten days after arrival.

If all cement is tested at the mill by the chemist of the buyer, such tests will not differ from those regularly made by the mill chemists working under the same specifications, for it is natural to suppose that the buyer's chemist would have access to the same apparatus and supplies used by the mill chemists. New rulings will probably follow that no Portland cement can be shipped until twenty-eight days old, after having passed the full test set up by the specifications.

Since all good Portland cement will promptly retrograde after the twenty-eight-day period any retest made after arrival at destination ten days after the twenty-eight-day test was completed and continued for another twenty-eight days would very probably never checked identically with the first test. The practical users of cement in the field have usually got to depend upon the integrity of the manufacturer to produce only such goods as come up to the standard specifications at the time of shipment as certified by the mill chemists, as has always been the case in the past. In the case of government work and other large structures designated laboratories will retest and check the tests of mill chemists. The vast majority of users of Portland cement are not particularly interested in the change of specification. In fact they will never realize anything has happened, for it is merely a matter of slightly improving the quality of the material without affecting practice in the field in any way whatever.

ST. LOUIS CEMENT MARKET GOOD.

St. Louis, Mo., July 1.—The cement situation is fairly good, stated Sales Manager Wright, of the Union Sand & Material Co., manufacturers of "Red Ring" Portland cement, which is so extensively used throughout this section. Mr. Wright adds that prospects look as though there would be a decided increase in shipments, although he is of the opinion that the city trade will not be as active as it should. "Building permits don't seem to be as heavy as ordinarily," he said, "and big jobs seem to be scarce, although there is a lot of work going on of a minor character. The big jobs are still being let, but for some reason they don't move, as for instance, those at Belleville, Ill., where many operations were brought to a close five weeks ago, and they are just commencing to work again."

Edison Portland Cement.

During 1900 Thomas A. Edison became very much interested in the Portland cement industry and, after studying the then best cement practices, became convinced that the rotary kilns in which the cement clinker was burned were much too small to be very efficient. He stated that he would build a rotary cement kiln 150 feet long. As the largest kiln in use at that time was sixty feet long, the idea was regarded as revolutionary, and practical cement men universally ridiculed it.

Regardless of the opinions of others, Mr. Edison went ahead and built a cement plant at New Village, N. J., in which he installed four of these long kilns. In 1903 he began shipping cement from them, and since then has added six more of the same size kilns.

Edison Kiln Supreme.

The idea was not as fantastic as the public were told by some of the cement engineers, for since 1904 no rotary cement kilns have been built except those of the Edison type. At the present time nearly all of the Portland cement made in the United States and a very large percentage of that made in Europe is made in the long kiln invented by Mr. Edison.

Another feature of the Edison cement plant is the crushing roll system for preliminary crushing. Instead of using small gyratory crushers, such as were in use at the time, Edison "Giant Rolls" were installed. These are five feet in diameter and five feet long, and act on a different principle from any roll heretofore in use. Patents on these have been sustained in the courts, and their use in the cement industry is confined to the Edison plant. There are, however, six of the largest stone crushing companies in the country using them, one company having a set of such size that it is capable of reducing in one operation blocks of stone weighing up to 40,000 pounds.

Enormous Crusher Capacity.

When these crushing rolls were installed at the Edison plant, the largest gyratory crusher in use took pieces of stone up to 150 to 200 pounds in weight. The rolls in use at the Edison Portland cement plant are capable of taking pieces ranging from 16,000 to 20,000 pounds in weight, and in an incredibly short space of time reduce it in a single operation to six-inch sizes and less.

Great Improvements Made.

The fine grinding of the raw materials and the finished product also received attention from Mr. Edison. At the time the plant was built all types of machinery for this purpose were units of small capacity. He invented a system of large units which has now been in use for about twelve years. During this time, however, great improvements have been made in capacity and efficiency in other types of grinding machinery, and Mr. Edison, whose sole aim is efficiency, has determined to make the Edison Portland cement plant the most modern in the east. He carefully investigated from all points of view all kinds of machinery in use, and for efficiency and quality has decided that the tube mill type is the proper thing. The tube mills he decided to install are seven feet in diameter and twenty-four feet long, and with other changes represent an expenditure of about \$200,000.

The Edison Portland Cement Co., therefore, will have a daily capacity of 6,000 to 7,000 barrels of Portland cement of quality second to none and made in the most modern and up-to-date mill in the country.

The company owns and control about 1,000 acres of land on which the supplies of cement rock are located. They also own at Oxford, N. J., ninety-six acres of land, on which inexhaustible supplies of pure crystalline white limestone are located. The plant, now containing ten Edison long kilns, consists of thirty-three buildings, having about eight acres under roof.

Thomas A. Edison, chairman of board of directors, takes a very active interest in the company.

W. S. Mallory, president, also devotes a considerable portion of his time to the interests of the company.

On March 1 Harold M. Scott was appointed assistant to the president in charge of sales.

A. C. Bruff, Boston, R. A. Wetzler, New York, and Gaston Daus, Philadelphia, district sales managers, have been quite successful in their solicitation.

W. L. Hassenplugh, who was for some time associated with the Portland Cement Association, is the advertising manager.

The New Village plant is but seventy-seven miles from New York City and is the first in the Lehigh Valley group served by returning west-bound equipment from the great eastern terminals. It, therefore, at all times receives an adequate supply of cars, and shipments are now being made throughout the eastern territory; west as far as Cleveland and Columbus, and south to North Carolina.

As in the sale of all other Edison products, the dealers' business is most highly prized. The Edison Portland Cement Co. will make every effort to advance the interest of the dealer along proper lines.

SIX MONTHS OF REAL ACTIVITY.

The first half of 1916 has been a busy period for the Portland cement industry in most parts of the United States. Labor troubles have caused the temporary shutting down of a few plants in Illinois, and the business ordinarily taken care of by these plants has gone to others in the central states, but none have been reported as having voluntarily closed in 1916.

The opening of a new cement plant nowadays, when the country is so well dotted with plants, is an event of importance, and the fact that two new ones have begun operations is of considerable interest. Both of them are of the Middle West, one at its extreme north, at New Duluth, Minn., the other at its extreme south, at Houston, Tex. The location of both was influenced more largely by commercial considerations than by the proximity of raw materials. The plant at New Duluth, a mill of the Universal Portland Cement Co., utilizes limestone brought by boat from the shore of Lake Huron near Alpena, Mich., and slag from the blast furnaces of the Minnesota Steel Co. at New Duluth. The plant at Houston is mill No. 2 of the Texas Portland Cement Co. It manufactures cement from oyster shells dredged from a reef in Galveston Bay and clay from Harrisburg, Tex. This plant is on tidewater, and efforts will be made to establish for it an export trade with South America.

In 1914 and 1915 there was a decrease in the production of cement, consumers exercising strict economy in its use, but the year 1916 shows a reaction, having opened with a demand unprecedented for a mid-winter season. Prices, which had averaged only eighty-six cents a barrel for the entire year 1915, began to rise toward the end of that year and in the eastern and middle states, where cement sold at seventy to ninety cents a barrel, they continued to rise in 1916 until, in June, they ranged from \$1.10 to \$1.25 a barrel. The increased prices, of course, do not mean an equivalent net increase in returns to the manufacturers, for the costs of explosives for blasting and of coal have both risen, and laborers are in many places demanding an increase in wages. These comparatively high prices have not, however, checked the demand for cement. Many manufacturers are selling all they can produce, and others are even drawing on stocks so as to fill orders promptly.

Although no statistics have been reported to the United States Geological Survey at this date, it is believed that the total output of Portland cement for the first half of 1916 has considerably exceeded that for the corresponding period of 1915. In general an optimistic feeling prevails among manufacturers, and it is confidently predicted that the year will show a gain over 1915, both in production and shipments of Portland cement. Moreover, there is a fair possibility that they will exceed those of 1913 and thus establish a new record.

MOVES OFFICES TO PORTLAND.

Melvin J. Ballard, vice-president and director of the Oregon Portland Cement Co., has been appointed the company's acting vice-president and hereafter the management of the company will be under his jurisdiction. Originally the main office was at Oswego, Ore., but the officers in charge of the company's affairs have been transferred to Portland, where the offices will be located hereafter. The following are the company's active officers: Melvin J. Ballard, vice-president; George Macdonald, secretary; Clark M. Moore, general sales manager; L. C. Newlands, general superintendent and director in charge of operations, having supervision of the plant, quarries and railroad properties of the company. Mr. Newlands makes his headquarters at Oswego and is the only active officer there.

LEHIGH PORTLAND CEMENT CO.'S OUTING.

The ninth annual outing of the Lehigh Portland Cement Co.'s officials, manufacturing, selling and auditing departments was held recently at Oliver Mosser's picnic grounds at Neffsville, Pa. The committee consists of Dan E. Ritter, chairman; George Kemmerer and W. C. Wieder.

The program included sack race, mill employees; sack race, Allentown office employees; three-legged race, mill employees; egg race, Allentown office employees; fat man race, all employees; banjo selections, Fries & Co.; Metropolitan Trio, three of 'em; coon songs, Bell; ragtime selections, McClellan.

At 4 p. m. a luncheon was served, the menu consisting of clam chowder, olives, celery, pickles, ham, cold beef, sliced tomatoes, blue fish, steamed clams, roasted potatoes, chicken salad, cheese, cantaloupe and fruit.

SUPERIOR MAY BE RE-ORGANIZED.

Cincinnati, O., July 3.—It is extremely probable that as a result of an agreement reached by stock and bondholders and general creditors of the Superior Portland Cement Co., at a recent meeting, the company will be re-organized. Lewis Drach, a well-known Cincinnati contractor, has been named as probably in charge of the work. It is said that Justus Collins, former president of the company, will dispose of his holdings and retire, and that Drach and his associates will take over the management, assuming liabilities to the extent of about \$110,000.

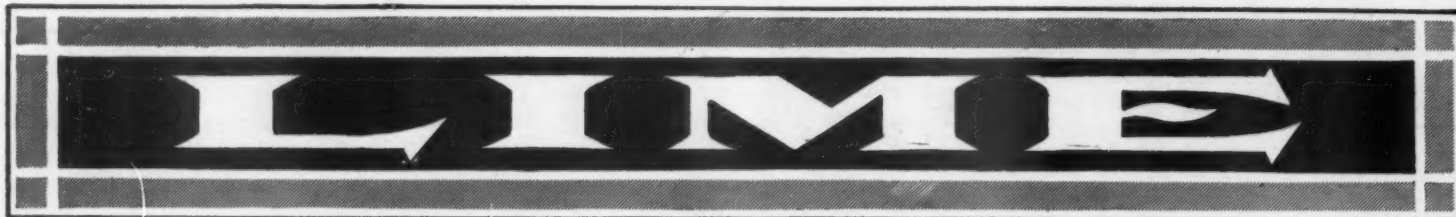
INCREASED DEMAND FOR CEMENT IN CANADA.

Montreal, P. Q., July 3.—Demand for cement in this country is increasing. The sales force of the Canada Cement Co. has of necessity been greatly increased since the first of the year. The cement plant at Exshaw, Alberta, employing a large staff, is now working at capacity and it is possible, if the demand continues, that the Calgary plant will also be reopened. The Exshaw plant is located on the C. P. R. in the center of the quarries.

The Canada Cement Co. now owns thirteen cement plants, six in Ontario, three in Quebec, three in Alberta and one in Manitoba. While a very large percentage of the output is at present being sold for roadway and engineering work, the demand for Portland cement for building construction is on the increase, especially in Ontario.

The statement that important orders have been received from Russia is, officials state, unfounded.

The city council of Olympia, Wash., has issued a permit to the Washington Cement State Silo Company to erect a manufacturing plant on Stevens street, where it proposes to manufacture concrete staves for silos.



The Definition of Hydrate.

Discussion and correspondence referring to the article in ROCK PRODUCTS AND BUILDING MATERIALS upon the subject of erecting such a definition as will mean something to the producers of high-grade hydrated lime develops the fact that several persons have been thinking in the same direction.

We will never probably be able to fix and limit burning conditions or the particular processes of hydrating and screening the hydrate in any way parallel to the steps in the manufacture of Portland cement, as some seem to think. The indispensable differences are inherent to lime, because there are very many types of lime from the natural product forward, and each of them requires to be treated in a different way at every step of the processes.

Warren E. Emly, of the United States Bureau of Standards, feels that the best way to overcome the difficulties growing out of the low-grade imitation hydrates is to do it by means of improvement in the standard specifications. In this connection it may be stated that the difference in quality, pretty well known to all lime men and especially producers of hydrate, is free or unhydrated lime mixed with partially hydrated lime. Upon this, another trouble follows naturally by the re-carbonation of the free or raw lime. By cutting down the allowable content of CO₂ to the minimum of two per cent, or one per cent, for instance, will eliminate all the troubles that grow out of excessive re-carbonation. To have the specification exclude all free lime might be drawing the line too closely, but two or three per cent is enough.

This is the purely technical way to dispose of the matter. All the bum and imitation hydrates have excessive quantities of free lime and, consequently, high percentages of CO₂, due to re-carbonation. Besides this, they vary in weight according to misuse of water in the processes of making. Tests of hydrated lime by such a specification as Mr. Emly suggests would very quickly separate the sheep from the goats, provided all users of hydrate would have their lime tested. Then it would not take a very long time for repeatedly rejected lime to become known as an article that will never pass the standard tests for hydrated lime. But that is not the way it is really done. Not one car-load shipment in two hundred is ever tested, so that there is no discrimination made between a real hydrate and the imitation until it is used. At the time of using and ever after, there is a very pronounced difference. In one case there is a howl and swift denunciation of the product; on the other hand, when the user gets a properly made hydrate, there are plenty of smiles and satisfaction, and usually more business.

Further discussion of this topic will be resumed in a future issue.

THE EASTERN LIME MARKET.

New York, July 3.—A fair demand for lime products throughout the eastern and southern territories is reported at the present time. With the spring and early summer liming periods over, the demand for agricultural lime has naturally dropped off to almost nothing, but plants making a specialty of the production of this lime product, are still operating at capacity or near capacity for storage, in anticipation of an active late summer and fall season. Agricultural sales in the eastern section

have been very satisfactory so far this year, and many plants have been taxed to the limit to supply this demand with reasonable promptness. Building lime demand at the present time is reported fair to good in all manufacturing districts, with a slight falling off observed of late in the southern states. Orders for hydrated lime have increased somewhat of late, and demand for this product at the present can be considered good. Chemical demand, which has been heavy during the entire year, is reported as becoming lighter in some districts, but this is not a general condition throughout this section.

In Virginia district, where a very active agricultural and building demand has existed since the first of the year, reports of late show a lessening in building demand with the agricultural trade practically supplied for the present. Kiln operation in this district continues heavy, however, due to production for storage and for meeting the fair demand for building and chemical products now prevailing. Advices from the West Virginia district show a continued good demand for building lime, which it is expected will remain firm for some time. Many of the kilns of the Maryland manufacturing district are now producing for storage, so to be in condition to meet the usual demand which will start on or about the second week in August. Chemical demand is shown by reports to have dropped off somewhat in this district, but a fair to good building demand still exists.

Pennsylvania plants are reporting a good general demand with a sudden increase of late in business for hydrated lime and bulk lime. Kilns of this section are operating mostly at capacity, with part production going to storage in preparation of the fall agricultural trade. The output of lime in this district for the first half of the year 1916, has been a very encouraging one to the average manufacturer, in comparison with the somewhat lighter demand that existed a year and two years ago during the same period. Extensive building and construction work, due to better earnings on the part of many industrial companies, have helped the building demand greatly, and the outlook appears very bright for a continuance of this healthy condition of trade.

In the New England District manufacturers have been unable to meet the demand for lime on account of their inability to obtain the labor needed to properly operate their plants. The demand in this district for lime from all trades, has been very good for the past three months, and it is unfortunate that labor troubles should come up at this time, thereby preventing that production needed to meet the healthy prevailing demand. Large munition plants have practically drained the lime plants of help, and the lime industry of this section have been compelled to meet the higher wage for labor in order to keep their production anywhere near the amount of demand.

The demand for all classes of lime in this section at the present time is reported as very good, which is largely due to the increased amount of building and construction work. The agricultural output of New England plants has also been very satisfactory, and the outlook for the fall demand of this product is considered very encouraging.

The James Rice Estate, Bangor, Me.; capital, \$50,000; incorporators, Frank X. Rice, president, John H. Rice, treasurer, James D. Rice and Charles L. Rice.

Status of Lime Barrel Bill.

BY HENRY M. CAMP.

The Lime Service Bureau, Washington, D. C.

The bill in Congress to standardize the lime barrel, known as Senate, No. 5425, passed the House of Representatives on June 28, with amendments, which have been disagreed to by the Senate. This will require that the bill shall go to conference and the necessity of the report of the conferees being agreed to by both branches of Congress, before the bill can become a law. At this writing, it is not known when the conferees will be able to meet for consideration of the bill, due to the fact that both Houses of Congress are extremely busy with very important legislation. The Standard Lime Barrel Bill is the only bill of its kind introduced during the present Congress, that has passed both the Senate and the House of Representatives. It is apparent that Congress realizes the great necessity of the passage of a bill to standardize the lime barrel, owing to the fact that the solicitor of the Department of Commerce has decided that the Tuttle Fruit and Vegetable Barrel Law, effective July 1, 1916, covers the commodity, lime. The barrel provided by the latter act, is one wholly unadaptable and impractical for the lime industry, and should the latter industry be required to use the barrel prescribed by the Tuttle law, it would cause severe disorganization throughout the lime trade.

An investigation of the various methods employed in the sale of lump lime in barrels, has shown that quite generally this product is sold in the weight barrel, while the Tuttle law requires the use of a measure barrel of dimensions 17½ inches diameter of head, length of stave 28½ inches, so constructed as to have a capacity of 7,056 cubic inches. The Tuttle law also provides for sub-divisions of the standard barrel as prescribed herewith, to be known as the one-third, one-half and three-quarter size barrels. Perhaps the most practical measure barrel for the lime industry, under the Tuttle act, is the three-quarter size barrel, the dimensions of which, as figured out by the Bureau of Standards, would require the construction of a barrel package as follows: Diameter of head, 15½ inches; length of stave, 27½ inches; distance between heads, 25½ inches; circumference of bulge, 56 inches; depth of croze, 3/16 of an inch.

With the failure of the bill to standardize the lime barrel becoming a law by July 1, 1916, the lime producers are subject to the provisions of the Tuttle law, requiring the use of either the standard barrel, the three-quarter size barrel or the one-third or one-half barrel provided by such act. This means that manufacturers must discontinue the sale of barrel lime by weight, and sell absolutely by the volume barrel under the provisions of this act.

It is hoped, however, that this demoralizing condition will not prevail very long, as it is felt that the Standard Lime Barrel Bill will become a law within the next month or so; that is, if the members of the Senate and House of Representatives can be brought to clearly understand the great hardship that has been caused to the lime industry of the country, through the application of the Tuttle law to the building commodity, lime.

Westchester & Putnam Lime Co., Peekskill, N. Y., has increased its capital stock from \$6,000 to \$25,000.

With the QUARRIES

Cordeau Successfully Used in 1,200 Foot Blast

The successful use of "cordeau" as a detonator was experienced in a ten-ton dynamite blast at the quarry of the United States Crushed Stone Co., at McCook, Ill., on Saturday, July 1.

Ninety-five holes, five and five-eighths inches in diameter, were drilled to a depth of forty-nine feet, one foot below the bed of the quarry, the Clipper well drill being used. They were placed twelve feet apart at an average distance of twenty-one feet from the face. Cordeau, which has long been in use in France and other European countries as a detonator, is practically a new venture in this country and consists of a lead tube filled with trinitrotoluene and very carefully drawn to uniform size. This cordeau is used in the drilled hole, extending from the top to the bottom and out of the top about six inches. The trunk line, also of cordeau, is then stretched the full length of the blast hole to be fired. The six inch extension above the holes is then split and placed around the trunk line, making a solid connection with each blast hole. Cordeau is detonated by the use of one No. six cap and a small piece of fuse or an electric exploder and travels at a speed of 17,000 feet per second. In the shot at the United Crushed Stone Co.'s quarry there wasn't a cap used below the ground. Electric exploders were placed at either end of the 1,200 foot line, although it is said that only one exploder was necessary. The second exploder was attached for the sole purpose of assuring a complete blast.

The explosive used was Trojan powder in cartridges five by ten inches and forty per cent strength. The first cartridge in the hole was tied to cordeau and was used to carry it to the bottom of the hole. After all of the powder was put in the particular hole being loaded, according to the burden it had to move, the hole was then tamped and filled with screenings.

The blast was fired and a clean break was successfully made. The object of drilling the holes one foot below the base of the quarry was to assure a break uniform at the bottom with the bed of the quarry. The manner in which the explosive seemed to work threw the bottom strata of rock outward about fifty feet upon which tumbled the rock from above. Practically all rock was reduced to sizes capable of handling by the steam shovel.

This was the second blast of this nature at this particular quarry and basing figures on the previous blast was estimated as removing 90,000 yds. of stone.

Manager H. L. Peaslee, stated that in his opinion there was an increase in efficiency of at least twenty per cent over the old method of using dynamite.

The stone found in the United States Crushed Stone Co.'s quarry is of a limestone nature and used extensively in concrete work. The company crushes approximately 1,000,000 yards of stone annually and, being located on the Santa Fe and B. & O. railroads, ships quite extensively in all directions.

The quarry is equipped with a number of steam shovels and an industrial locomotive and cars.

The preliminary crushing is done by an immense

LARGE BLAST AT BIRDSBORO.

On June 21 a blast consisting of 25 tons of exploding dynamite loosened a mass of rock at the quarry of the Birdsboro Stone Co., Birdsboro, Pa., that will require a year to market. The same manner of loading the holes and arranging the trunk line with cordeau as is explained in the shot fired at the United States Crushed Stone Co.'s plant was used at Birdsboro.

There were thirty-two holes, six and one-half inches in diameter and extending to a maximum depth of 155 feet and a minimum depth of eighty feet, the holes being drilled by three well drills of the Keystone Drill Co.'s type. The holes were placed twenty



TWELVE HUNDRED-FOOT FACE, FORTY-EIGHT FEET DEEP IN ACT OF CRUMBLING UNDER PRESSURE OF TEN TONS OF DYNAMITE.

Edison crusher which is capable of crushing the largest stone handled by a steam shovel or carried in an industrial car and has a capacity of eighteen tons per hour. After the material leaves the Edison crusher it is dropped into a hopper and carried up a second incline to smaller crushers, from which it is stored into bins directly over the railroad tracks. During this season an average of 100 carloads daily are shipped.

feet apart and thirty feet from the face. It was estimated that 600,000 tons of rock was loosened.

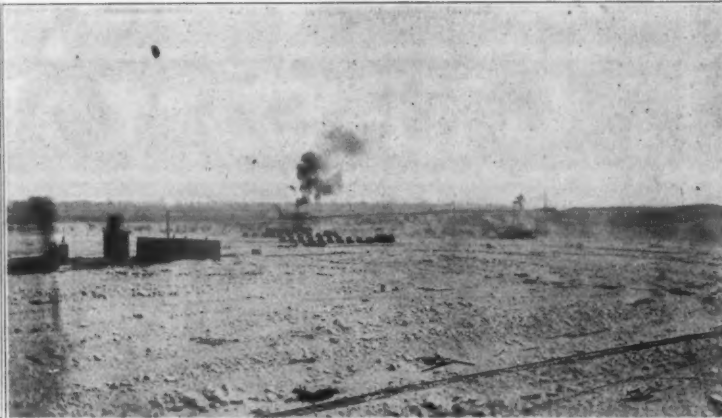
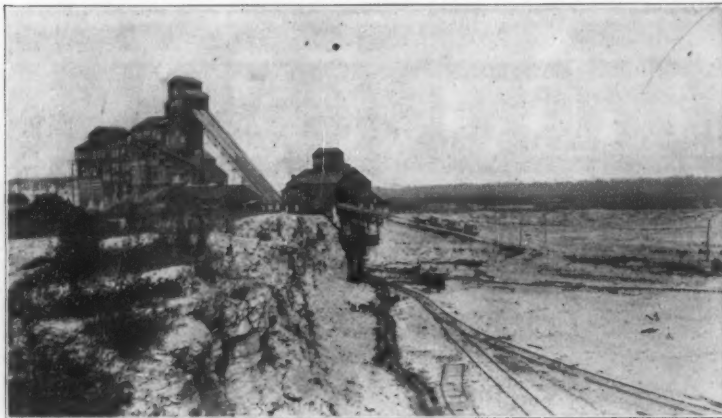
The Illinois State Highway Commission has announced the allotment of state aid funds for road building purposes for the years 1916-1917. A total of \$990,000 is to be distributed by the state as its share of the cost of highway construction.



BEFORE THE BLAST. NOTE ARRANGEMENT OF CORDEAU ABOVE THE HOLES AND EXTENDING ENTIRE LENGTH OF 1,200 FEET.



AFTER THE BLAST. PERFECT BREAK THE ENTIRE DEPTH OF FORTY-EIGHT FEET AND LENGTH OF DRILL HOLES.



PANORAMIC VIEW OF THE UNITED STATES CRUSHED STONE CO.'S CRUSHING PLANT AND QUARRY OPERATIONS AT MCCOOK, ILL.

CITY CRUSHERS DEMORALIZE MARKET.

St. Louis, Mo., July 3.—Producers of crushed rock find it difficult to restrain their feelings with regard to the crushed stone situation in this city. From all supply sources come the same answers as to business conditions, which, when merged, simply mean that the market is at its lowest level as far as the sale of the product is concerned. The quarry men have faced, and are now coming through, one of the most vexing turn of affairs they ever experienced, the trouble being that the city itself has become a competitor, due to its having gone through a deposit of solid rock when cutting the Mill Creek sewer, and placing a number of crushers about town which crushed the stone and put it upon the market at prices far below any self-sustaining basis. Hundreds of thousands of tons have been disposed of in this manner, and there now remains about 200,000 tons yet to be gotten out of the way.

Added to this, building has not been anything like normal, due to differences between the contractors and the labor unions, and a general depression which has come about because of the uncertainties of the times. With the exception of a number of districts in which apartment houses are being erected, people for some reason have postponed building residences, which usually plays an important part of the construction activities, and architects therefore have little work on their boards. Announcement was made today, however, that some important apartment houses are contemplated, which will total about \$50,000.

With this double-barrelled joy killer confronting them, the quarries have not been able to land many contracts of appreciable size, although there are, of course, some jobs of a smaller character which require crushed rock, but until the city ceases to be in the quarry business little can be expected in the way of inquiries. There are one or two phases, however, which are creating some interest. For instance, the disposition of the street department to use stone crushed to a powder in its street repair work, whereas sand and gravel have been universally specified in the past. And as street improvements of considerable magnitude are planned, it is hoped that the increased demand to come will partly make up for the loss occasioned by its own crushers.

The Fruin-Bambrick Construction Co. has been able to close some inquiries, but states that the generally high prices of labor and material, such as cement and steel, with the low prices of crushed stone, have brought the business to a point where it amounts to "swapping dollars." They are furnishing some material for street building by the penetration method and as a cushion for brick pavements.

Apartment houses are taking some material from the Progress Quarry, but few sales are reported in other construction lines.

The Columbia Quarry Co. does not attempt to

supply the St. Louis market, although it has its general offices in the Fullerton building here. It has a new and up-to-date plant at Krause, Ill., and ships as far north as Springfield, Ill., and to southern points as distant as Alabama. The stone of the Columbia concern is said to contain ninety-nine per cent carbonate of lime, and in addition it has a plant one and one-half miles from Krause, and on its own railroad, from which it is securing material for fluxing purposes.

Prices here center around the seventy-five-cent-per-ton mark in carload shipments, to which forty cents is added for hauling in smaller quantities.

KEEN COMPETITION IN OAKLAND.

Just now the city of Oakland, across San Francisco bay from San Francisco, is the scene of some lively competition in the crushed rock, sand and gravel business. The Leona quarry has recently come into the field with enlarged facilities and some of the rock and gravel companies operating along Niles river have also increased their output. The latter companies are taking sand and gravel from Niles river and crushing the larger boulders for crushed rock, so that they have a very complete line. They also have the advantage of cheap rates into Oakland, the chief market on that side of "The Bay." As the matter now stands, the quarries and pits supplying Oakland have a capacity far ahead of the present consumption, and keen competition and a certain amount of price-cutting have resulted.

NEW QUARRY VENTURES.

Seneca Lake Limestone Corp., Geneva, N. Y.; capital, \$10,000; to operate limestone quarries; incorporators, Harry E. Col, George G. Goodelle and E. M. Stanton.

Chico Crushed Stone Co., Chico, Tex.; capital, \$25,000; incorporators, J. W. Barnett, R. L. Morris and Arthur S. Goetz.

The Riverside Stone Co., Fremont, Ohio; capital, \$15,000; incorporators, J. W. Forsythe, J. W. Pare, Chester A. Culbert, W. O. Fregelist and R. A. Hunsinger.

Hamburg Quarry Co., Hamburg, Mo.; capital, \$2,000; incorporators, John J. Helper, Thomas Louergren and James J. Rutledge.

The Marietta Stone Co., Marietta, Ohio, has increased its capital from \$10,000 to \$100,000.

John La Spina Stone Co., Inc., New York City, capital \$5,000; quarrying lime, stone, etc.; incorporators, John La Spina, Shepard La Spina and Clarence Lott, 440 E. 108th street, New York City.

The Markle Stone and Lime Co., Markle, Ind., issued \$25,000 preferred stock, making the total capitalization \$50,000.

Fayette Agricultural Limestone Co., Lexington, Ky.; incorporators, Frank B. Barnard, Ray Stewart and others.

TEN-TON BLAST AT FRISCO.

The largest blast ever let off in the San Francisco Bay district was exploded on June 13 near Daly City just south of San Francisco by the Mission Quarry Co. Ten tons of dynamite were set off by the new explosive, trinitrotoluene, loosening more than 300,000 tons of rock and earth. It required four days to place the explosive. Mayor Rolph of San Francisco and the board of works of the same city were present to watch the explosion and its results.

The Mission Quarry Co. is building a new quarry near the present one at a cost of \$15,000. The old quarry will also be operated as at present.

LOUISIANA FOR GOOD ROADS.

A main state highway trunk system of roads is proposed for Louisiana in a bill presented to the legislature of that state by Mr. Alexander. It is accompanied by another bill which calls for an amendment to article 291 of the constitution of the state of Louisiana relative to the creation of a state highway fund. It is proposed to create an indebtedness of \$15,000,000 for the purpose of constructing the roads which will be placed in the control of the Board of State Engineers.

In all of the requirements of the bill the parish of Orleans is excepted. The city of New Orleans is in this parish. Section four of the bill states "that all roads comprising part of the state highway trunk system shall be permanent metal surface roads with a width of not less than fourteen nor more than eighteen feet, costing not to exceed \$8,000 per mile on any road exclusive of bridges and culverts. No bridge shall be constructed as a part of this system with the proceeds of any of the state highway fund at a cost in excess of \$5,000."

Building material dealers of the Crescent city and other communities of Louisiana are taking an active interest in the bill which they hope will be passed.



MAP OF LOUISIANA, SHOWING PROPOSED HIGHWAY SYSTEM.

GYPSUM PRODUCTS

Report Withdrawn

The creation of standard specifications upon gypsum and gypsum products has long been a matter of interest to all those who desire to accumulate a broader knowledge of the material and its uses. Just about all of the natural and manufactured rock products generally used in modern construction has received or is now receiving technical attention. As a result of this, better knowledge has been made available for the guidance of engineers and architects who specify the material, as well as insuring a better control of the products in actual use. The development of the uses of gypsum and gypsum products is of comparatively recent origin. There is a dearth of reliable literature upon the subject that deals with the essentials in any basic kind of a way. True, each producer and manufacturer has worked out methods and formulas for practice in connection with the particular materials and products that they offer in the markets. But all of this work has been done independently and for the most part by experimentation in the field as well as by the advice and suggestion of mechanics whose experience has taught them some of the practical fundamentals.

There is next to nothing in print that is tangible and reliable relating to gypsum, its products and its uses which in a comparative way would help one to know more about them and so provide for more intelligent expansion of the industry.

If one really wants to know anything reliable it is necessary to don overalls and take hock, trowel, darby and finishing brush in hand and mount the scaffold to get such knowledge "out of the mud." For this reason very few men prepared with a scientific education have ever undertaken to part the veil of mystery that enshrouds the real kernel of information that the mechanics learn. There is no use to try to glean very much information of technical value from a mechanic. He is generally willing enough to try, but he lacks the power of expression in the first place, and really is insensible of the phenomena at work in his mixtures. It is very much like Aunt Dinah and her biscuits: If you leave her alone in the kitchen with the flour, lard, etc., she will never fail to produce that wondrous and altogether delectable food product that has made Virginia and Kentucky homes famous to epicureans. But to write or dictate a recipe, or to show how she does it to someone else invariably ends in failure.

Having constantly tried to uncover more light in this direction repeatedly during a period of fifteen or sixteen years it was with no little satisfaction that we witnessed the appointment of committee C-11 by the American Society for Testing Materials, to study, classify and standardize specifications for gypsum, gypsum products and the manifold uses of the same.

That was three years ago. The chairmanship of the committee was well placed in the hands of R. J. Wig, engineer, connected with the United States Bureau of Standards. L. I. Neale became secretary. Warren E. Emley, chemical engineer of the Pittsburgh laboratories of the United States Bureau of Standards, was chosen, together with the technical representatives of all of the producing concerns manufacturing commercial products of gypsum in this country.

No committee of the great society probably has ever worked more persistently and carefully from

the start. Mr. Wig has been on the job all the time. That is to say, he has been on the watch-tower always to catch every suggestion that may lead on to more light if developed. Meeting after meeting has been held and subcommittees put to work upon the various branches of the subject, and these in turn have experimented, met and discussed results. Mr. Emley has conducted exhaustive microscopic investigations of raw gypsum and gypsite, of the calcined products and of pastes and plasters composed of neat water mixtures and with sand; also with the lime and lime and sand mixtures.

Very early in the study it was found that a very jargon of terms was in the way of progress. The same condition that was attributed for the dispersion of the workmen in the construction of the Tower of Babel in prehistoric times confronted the committee.

S. G. Webb became chairman of sub-committee V, charged with tabulating terms for the purpose of digesting the conflicting elements so as to create a glossary that will have some distinct meaning to it. It was recognized that until this preliminary work could be practically completed very little co-operative work could be accomplished, because the terms used in correspondence were so misleading that no two men could understand exactly the same meaning by the use of any of them.

Having taken a hand upon several occasions in the past along these very lines, we know how to sympathize with Mr. Webb and his committee perhaps better than anyone else. There was some criticism of the definitions, as well as the liberties taken by the sub-committee in defining materials not distinctly within the circle of the gypsum industry. It is very hard indeed to make any progress in the matter of definitions without using comparisons, and to definitely state definitions that properly belong outside of the glossary being established. The glossary as offered for consideration, not for adoption, will be improved and corrected by discussion and suggestion until it will finally be made fit for adoption, because generally usable. At least a good start has been made. There is something to shoot at, and all of the objectors can help by committing their suggestions to writing for the edification of the committee.

Specifications for the uses and application of gypsum plasters were found to be so numerous and so conflicting that the whole subject of the report as bearing upon that branch was withdrawn by Chairman Wig for further study and co-operative action. The committee is a very large one, and, like all other committees of the American Society, is composed one-half of the representatives of manufacturers and one-half of engineers representing the consuming public. Competition amongst manufacturers of gypsum products is so keen that none are disposed to modify any of their working specifications. Each doubtless confidently believes that his own specifications are superior to any standard that could be adopted.

Mr. Wig's committee really set out to overcome difficulties and differences that reach back to the natural deposits of raw materials. Some of these are so dissimilar that here is scarcely any common status for standardization. The products derived from these widely varying raw materials are also basically very different from one another, although used for the same purposes to a great extent. The standard specifications, when so drawn as to be ac-

ceptable to all of the factors in the gypsum industry with all of their variables taken into account, will have to be so general as to be of little practical use unless rigid definitions govern the actual bonding values of the materials.

Structural gypsum products are a most important feature of the industry now being developed and rapidly growing in importance. W. A. Slater is chairman of sub-committee III having the standardization of this branch in charge. Co-operating with other committees of the Society working upon the fireproofing materials considerable progress has been made, and the standards now under consideration will deal with fire resistance as a cardinal principle.

The whole committee, which consists of twenty-eight members, has made great progress with an extremely difficult topic of study, and proceeding deliberately with due regard to all the variables, they will ultimately accomplish wonderful benefits to the gypsum industry in America.

First of all, let everybody help the committee in the important matter of getting the definitions correct, for that is the best foundation to simplify correspondence and co-operative discussion.

WESTERN GYPSUM CO. ORGANIZED.

Western Gypsum Co. has been incorporated at Cleveland, Utah, with a capital of \$500,000. Edward D. Priest is president and M. A. Priest, Fred S. Kilbourne, W. H. Hill and J. F. Mangold, directors.

The Rex Plaster Co., of Los Angeles, Calif., has bought out the magnesite properties of the Avery-Alcorn-Prindle syndicate at Success, near Porterville, Calif. A tramway will be built to connect the deposits with the railroad; and the material will be shipped to the company's plant at Los Angeles.

MEMPHIS GRAVEL DEMAND GROWING.

Memphis, Tenn., July 3.—The several gravel firms now quartered in Memphis report a good outlook for later in the season but June business was much interrupted by reason of heavy rains in Tennessee and Arkansas. Much road work is being mapped out and in the local territory some important roads are being charted incident to the opening of the new bridge over the Mississippi river at Memphis.

The Union Sand & Material Co. finds a good summer market both on sand and cement and is furnishing the material for some large jobs in this territory.

The Kavanaugh Sand Co. at its several Memphis yards and the downtown office is active.

PITTSBURGH BUSINESS PLEASING.

Pittsburgh, July 3.—The Ohio River Sand Co. is much better pleased over this month's business this year than for several years. Compared with last year it showed a very commendable gain. Its business in carload lots from Ambridge down the Ohio river has been very good and good weather and a good stage of water lately have helped it immensely in making its trade profitable.

The Rodgers Sand Co. is delivering an immense amount of sand to different plants of the United States Steel Corporation in this district.

CLAY PRODUCTS

PRACTICAL TESTING METHOD FOR FIRE BRICK.

Not least amongst the valuable papers presented at the annual meeting of the American Society for Testing Materials was that entitled "Practical Methods for Testing Refractory Fire Brick," by C. E. Nesbitt and M. L. Bell.

In this paper the authors departed from the well-worn path of investigators who attacked the problem of refractories from the standpoint of the inherent physical properties of the raw materials from which fire brick are made. While all such tests have been of highly interesting technical significance, there has always been lacking the important feature of practical applicability by the man who wants to select from his stock of fire brick those best suited for any particular requirement.

An exhaustive study was made of all the various conditions in which fire brick are used, and the causes of failure carefully studied and tabulated. Then tests to imitate in so far as possible the grief of practice were found for each of the causes of failure, so that the tests could be applied to finished brick with special regard to the resistance required in service.

Tests have been worked out for impact, abrasion, spalling, slagging, compression, expansion, contraction and friability, together with qualities corollary to these and developed in conjunction with the tests.

As the first comprehensive presentation of a systematic plan for testing refractories in a practical way, the work of the authors was highly commended by such eminent authorities as Professor R. C. Purdy and Professor A. V. Bleining, who considered the paper, with its appendix descriptive of apparatus for conducting the various tests as distinctly progressive.

NEWS OF THE PITTSBURGH FIELD.

Pittsburgh, Pa., July 3.—Prices on brick have not shown any special change during the past few weeks. Building brick are in slightly better demand. Foundation work has been going ahead rapidly and those towns which are fortunate enough to have enough building on hand are now doing good. The delivery of paving brick on the roads has also been started and is making good headway. Paving brick manufacturers are much better satisfied with the situation than they were one year ago. The tendency of prices is pretty firm. Stocks, especially building brick, are fair to good and there is no trouble in making deliveries where the orders can be secured.

Victory for both sides is claimed in the outcome and settlement today of the suits between the three Mt. Union brick plants and the County Commissioners, growing out of the increase of the assessment levied on the plants. Testimony was heard on the justice of the increase by the county commissioners of the assessment of the Harbison-Walker plant to \$150,000 from \$65,000, and of the General Refractories plant to \$100,000 from \$30,000. Brick men and the commissioners got together and settled their differences by agreeing on a twenty per cent reduction of each plant, with the understanding that each side would pay the costs each had been put to and the case would be settled.

The Harbison-Walker Refractories Co.'s stocks are among the most popular on the local exchange

at present. The company is doing the biggest business in its entire history. The report of its financial condition for the six months ending March 31, 1916, showed a surplus after all charges and dividends, of \$739,543. For the entire previous fiscal year the surplus was only \$562,889 or almost \$200,000 less. If the earnings of the company continue at present ratio during the rest of its fiscal year it will show a surplus of approximately a million and a half.

E. C. Swanson of Youngsville, Pa., is one of the incorporators of the newly organized Colonial Brick Company there and is making things hum at its new plant. C. E. Foster is president and C. P. Clark, treasurer of the company.

The Zoar Fire Clay Co., of Zoar, Ohio, has increased its capital from \$65,000 to \$100,000 in order to extend its operations considerably.

The Etna brick plant at New Cumberland, W. Va., which has been down for several months has resumed operations.

The Ohio Face Brick Co.'s property at Fredericksburg, Ohio, will be sold at sheriff's sale July 15, on an order secured by Captain James B. Taylor. The property consists of ninety-seven acres underlaid with coal and is valued at about \$16,000.

President Britain Day of the American Fire Clay Co., of Cleveland, is looking after the proposed extension of the company's plant near Marquis, Mahoning county, O.

The Mount Union Silica Brick Co., of Mount Union, Pa., has filed a petition asking for a decree of dissolution. James S. Woods is solicitor for the company.

A. C. Houston, of this city, has started proceedings in Common Pleas court at Lisbon, Ohio, to force the sale of all the holdings of the Rogers Sand Co., which operates in Middletown and Elk Run townships near Lisbon. The action was filed against the company and also against John W. Hall, East Liverpool, its secretary, Patrick Connors, Rogers, Ohio, its president and S. F. Wade, Toronto, Ohio, as trustee. The plaintiff holds a promissory note against the company signed by Hall and Connor and dated Dec. 13, 1912, amounting to \$3,525.

John D. Kelley of the Kelley Brothers of Clarksburg, W. Va., has secured the contract for building a large fire brick and clay plant for the Maryland Coal Co., near that place and also to construct a spur railroad into the Georges Creek coal field for the same concern.

NEWS OF THE FIELD.

Fire starting in the kiln of the Hocking Bros. brick yards, between Green Bay and De Pere, Wis., resulted in damage of \$2,000 on the night of June 27.

Zerrenner Brothers suffered a loss of about \$600 recently when fire damaged two kilns of their brick yards on the Shawano road, New London, Wis. A spark from a burning kiln set fire to the roofs.

The California Commissioner of Corporations has authorized the Los Angeles Brick Co. to issue bonds to the amount of \$125,000 to be sold at par. The present holdings of the company have been appraised at from \$200,000 to \$227,000.

Manager John Gerlach of the Richmond Pressed Brick Works of Richmond, Cal., reports that he

shipped out during the last ten days of May approximately 300,000 brick to various points.

Building material men of Milwaukee were represented in the "Preparedness Parade," which is to be held July 15. "Tom" Dever, of Ricketson & Schwarz, is captain of a section in the unattached division, which is composed of those whose organizations will not compose a separate division.

M. R. Snyder of Nicholasville, Ky., will open up a brick yard at Irvine, Ky.

The Cumberland Clay Products Co., of Philadelphia, Pa., has recently been granted a charter under the laws of the state of Delaware for the purpose of dealing in clay products. The new concern has been capitalized at \$200,000.

One of the most important recent deals in the brick business in Canada is the acquiring of the plants of the Toronto Pressed Brick and Terra Cotta Co. at Milton and the Medina Shale Brick Co. at Streetsville by John S. McCannell of the Milton Pressed Brick Co., Milton. The first mentioned company has one hundred acres adjoining the property of the Milton Pressed Brick Co.'s three hundred. A new fourth kiln will be erected and this plant will be kept in operation. The plant at Streetsville has eighty acres and a machine will be kept running there. Mr. McCannell is one of the most successful men in the business and, with the late Dr. Robertson, started the plant at Milton over twenty-five years ago. Since then it has been in continuous operation, the product being shipped from coast to coast.

The San Jose Brick Co., with works at San Jose, Cal., which has a season capacity of 20,000,000, has recently reopened for the 1916 season. Contracts for several million bricks are already on hand.

The Los Angeles Pressed Brick Co., with headquarters in Los Angeles and plants in several points in California, is now beginning preliminary construction work on its fourth plant at Elsinore, in the extreme southern end of California.

NEW CLAY PRODUCTS INCORPORATIONS.

Union Brick & Tile Co., Modesto, Calif.; for the purpose of manufacturing brick, tile, sewer pipe, etc.; capital, \$50,000; incorporators, D. W. Morris, N. E. Leek, W. A. Downer, J. S. West and W. M. Anderson.

United Brick & Tile Co., Tulsa, Okla.; capital, \$100,000; incorporators, John D. Richards, W. D. Abbott and F. A. Peek.

Glasgow Clay Products Co., Glasgow, Va.; capital, \$100,000; to manufacture brick, fireproofing blocks, etc.; C. H. Locher, president, and H. O. Locher, secretary-treasurer.

Peerless Clay Products Co., Audubon, N. J.; capital, \$250,000.

Columbia Brick & Tile Co., Columbia, S. C.; capital, \$200,000; incorporators, Edward H. Titus and others.

The Bessemer Brick Co., Monongahela, Pa.; capital, \$10,000; incorporators, J. A. Spence, F. R. Colvin, Louis Raynal, Monongahela City, Pa.

The Apollo Refractories Co., Apollo, Pa., incorporators, Earl J. McKeever, Walter A. McGeary and J. T. Stewart.

The Wolf-Lanning Clay Co., Dennison, Ohio; capital, \$150,000; incorporators, Edmund J. Wolf, Theodore Lanning, Chauncey G. Newton, A. Roy Lanning and John A. Wolf.

CHAIN BELT COAL-HANDLING SYSTEM.

The accompanying photographs show a substantial yet inexpensive coal and coke-handling system as installed at the North Avenue Fuel Co.'s yards in Milwaukee, Wis. This is an ideal installation for the dealer who has a side track and wishes to utilize his storage yard to its fullest capacity with the least expenditure of time and labor.

Coal and coke are received in bottom dump cars which are switched over a steel track hopper located between the rails of the railroad track. The track hopper is level, with the railroad track on top, and has a discharge opening at the bottom



FIG. 1. COAL BEING DUMPED INTO HOPPER AND LOADED ONTO CONVEYOR.

large enough for mine run coal. A large hinged gate, operated from the ground level by means of a lever, regulates the feed to the conveyor. The operator dumps the car and the material flows by gravity from the track hopper to the conveyor beneath, which carries it to the storage pile. Both the track hopper and loading end of the conveyor are in a pit (Fig. 1).

The conveyor consists of two strands of steel "Roller Chain Belt" with a steel flight suspended between them. The chain travels upon a steel-lined track in a groove and hence does not come in contact with the material to any appreciable extent. The entire framework is of wood and the trough along which the coal and coke are pushed by the flights is lined with steel. The conveyor is set at an incline and after attaining a height of twenty-five feet runs horizontally (Fig. 2). The horizontal portion is provided with slide valves, and below each slide valve is a rotating gate. This permits discharging coke on one side of a central partition and coal upon the other. The various grades of coal are kept in separate bins and by manipulating the valves and gates the discharge of material can be directed to any particular bin. A walkway (Fig. 3) gives ready access to any portion.

An electric motor, controlled from the ground level, drives the conveyor and the system has a

capacity of thirty tons per hour. All gears are well guarded and the simple construction of the entire system leaves small opportunity for accidents.

When making deliveries out of storage the material is loaded into wagons with a wagon loader. Thus one man ordinarily can take care of the entire work connected with receiving coal by rail in bottom dump cars and loading wagons for delivery to customers. The ease and rapidity with which cars may be unloaded becomes a matter of paramount importance in emergencies, and this, with the above system which was furnished by the Chain Belt Co. of Milwaukee, is reduced to the simple operation of dumping the cars.

The group insurance plan, which has been worked out to meet the growing responsibility among employees regarding the welfare of those associated with them in their daily work, has been inaugurated in Milwaukee, Wis., by the Chain Belt Co., manufacturers of construction machinery. The plan recognized the fact that however good the wages, modern standards of living keep pace with them, and that it is growing more difficult for employees to meet current expenses, and at the same time create a fund to take care of their families in event of premature death. The Chain Belt Co. has insured its employees in the Equitable Life Insurance Society of New York. Those who have been with the concern two years or more get \$1,000 insurance; those less than two years and more than one year



FIG. 2. INCLINED CONVEYOR SHOWING SPOUTS AT TOP AND DIVIDING WALL FOR SEPARATING COAL FROM COKE.

get \$500 insurance. The total insurance amounts to more than \$300,000, the premiums to be paid by the company.

SALESMAN DIES AFTER ACCIDENT.

Following a frightful accident near Jasper, Ind., William Marion Forman, thirty-three years old, a salesman for J. B. Speed & Co., Louisville, died of lockjaw which developed from injuries and burns received on June 15. Mr. Forman and Grover Fritts, of Louisville, were making a trip through Indiana in a roadster. Near Jasper the car turned over, pinning the men underneath. The gasoline tank exploded, and the burning gasoline flowed over them. Fritts was dead when aid reached



FIG. 3. COAL STORAGE PILE. NOTE STAIRWAY AND WALK ON SIDE OF CONVEYOR.

them, his legs having been burned away. Mr. Forman, who was also pinned, died a few days later after being brought to Louisville and every effort made to save his life. He was never able to give the details of the accident. He is survived by his wife, two young daughters, a son, William Marion Forman, Jr., who was but two weeks old at the time of the accident; a brother, George W. Forman, of Owensboro, and his mother.

OBITUARY.

Fred C. Nuzman, of Circleville, Kans., died June 12. Mr. Nuzman was a pioneer lumberman, having lived in Circleville since 1861. He was the father-in-law of Henry J. Allen, the prominent Progressive of Wichita, Kans.

On May 3, Henry Roberts, of Texamah, Neb., who was operating yards at Ceresco and Kennard, was found dead in a room adjoining his office. He was suffering from tuberculosis and his death was not a surprise. He was born at Arlington, Neb., and was 43 years of age.

POSTPONE ERECTION OF DEPOT.

The Norfolk & Western Railroad has decided to hold up building its new \$450,000 depot at Portsmouth, O., until next season on account of many changes which will have to be made in the present tracks, wrecking buildings, etc.

THE BOURSE

Secure Results GIVE IT A TRIAL See Page 36



The Brainard Pulverizer

Positively does not grind the material, works by impact only and will handle either wet or dry feed. All principal wearing parts are made of the best grade of manganese steel, and the casing is steel lined throughout.

A guaranteed Pulverizer, strong, durable and efficient. Made in four sizes.

WRITE FOR FURTHER INFORMATION

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:: THE :: BOURSE

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No display except the headings can be admitted.

Remittances should accompany the order. No extra charges for copy of paper containing the advertisement.

EMPLOYEES WANTED

WANTED AT ONCE

A barrel maker; steel hoops used. Steady work.
AMERICAN LIME & STONE CO., Tyrone, Pa.

WANTED—Reliable and competent party to quarry and crush stone by the ton in Pennsylvania. Plant installed and in good condition. Address Box 1135, care ROCK PRODUCTS AND BUILDING MATERIALS.

EMPLOYMENT WANTED

Experienced plaster man wants position as superintendent of mixing plant or plaster salesman. Address Box 1140, care ROCK PRODUCTS AND BUILDING MATERIALS.

BUSINESS OPPORTUNITIES

LIME STONE QUARRY

For sale or rent (5) five miles south on C., B. & Q. track. Very little stripping. Good for fertilizer and crushed stone. Good market, good buildings. Will take partner if party can take charge of the business. E. G. Kemper, Burlington, Ia.

WANTED—Superintendent with experience and \$5,000 to invest in a sand company in Eastern New Jersey controlling more than 300 acres finest quality Sand Blast and Filtration Sand—testing over 99% Silica. Located on Pennsylvania Railroad. Company sells concrete sand only now, but contemplates building a drying plant, erection of which he can supervise. Exceptional money making possibilities because wet plant would pay operating expenses of both wet and dry plants. Address Box 1138, care ROCK PRODUCTS AND BUILDING MATERIALS.

MACHINERY WANTED

WANTED—A rotary sand-lime brick press twelve mold Saginaw press preferred. State condition, price and location. Address Box 1129, care ROCK PRODUCTS AND BUILDING MATERIALS.

WANTED TO BUY—One 100-T or larger second hand steam shovel. Must be in first class condition. Address The Western States Portland Cement Co., Independence, Kansas.

WANTED.

Steam shovel, 100 ft. boom, 1 yard shovel. Address Box 1130, care ROCK PRODUCTS AND BUILDING MATERIALS.

WANTED—Jaw Crusher of "Blake" pattern, about 40 or 42x36. Address Box 1133, care ROCK PRODUCTS AND BUILDING MATERIALS.

WANTED

2d Hand Grinding Machinery

Griffin Mills preferred

State make and price. Address Box 1122, care Rock Products & Building Materials.

WANTED

Slack line excavators, 600 ft. radius; Gravity Return Jigs, Log Washers, Screens, Picking Belts, Light Stand. Gauge Saddle Tank Locomotive.

MANGANESE PRODUCTS COMPANY
35 Wall St., New York, N. Y.

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We have many bargains in high-grade "used" Steam Shovels, Locomotives, Cars, Cranes, Cableways, Crushers, Air Compressors, Hoists, etc. What do you need?

WM. B. GRIMSHAW COMPANY
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FOR SALE.

One 5-ft.x22-ft. Bonnot tube mill, steel lining.
One 5-ft.x22-ft. Bonnot tube mill, wood block lining.
One 4-ft.x16-ft. Schmidt tube mill, silax lining.
One Bonnot stone separator.
One 42-in. Sturtevant Underrunner emery mill.
Three 6-in.x5-in. Bonnot slurry pumps.
Two 5-in.x4-in. Bonnot slurry pumps.
One 250 H.P. Hamilton Corliss Engine.
One six ton Byers geared locomotive.
Twenty K & J two-way dump cars, three yard capacity.
One 60-ft.x16-ft.x5-ft. dredge boat, 5-in. slides and ends, bolted.

All in good condition and ready for delivery.
Charles F. O'Donnell, Bellefontaine, Ohio.

FOR SALE.

1 Hamilton-Corliss Engine, 24"x48".
1 Bullock-Corliss Engine 20"x48".
1 Ingersoll Sergeant Duplex Steam Driven Compound Air Compressor, Class G-2, capacity 925 cubic feet free air per minute.
45" gauge and 36" gauge locomotives and cars, end and side dump.
Above equipment in good condition and will make extremely low prices for immediate sale. Address The Casparis Stone Company, Columbus, Ohio.

FOR SALE—One No. 24 American Ring Pulverizer, manufactured by the American Pulverizer Co., E. St. Louis, Ill. Machine has 1/2 rings and 1/2 hammers. The grate bars are 1/2" mesh. Rings, hammers and grate bars are manganese steel. This machine has not been used enough to show any wear. Weight 7,800 lbs. Price very reasonable. Address Box 1137, care ROCK PRODUCTS AND BUILDING MATERIALS.

FOR SALE.

No. 5 Austin Gyrotory Crusher, Manganese Fitted, 55' Elevator, 40"x12' Screen, Holst, Cars, Bin Gates. First class condition, run only two months. Bargain if taken at once. Address Box 1139, care ROCK PRODUCTS AND BUILDING MATERIALS.

THE BEAL CORE DRILL.

Best and cheapest for testing all kinds of rock and mineral lands. Cores taken out from 1/2 to 5 inches in diameter. Estimates furnished on work by the foot or day. Edw. S. Beal, Contractor, 214 Woodlawn Ave., Lansing, Mich.

FIRST CHECK FOR \$300 BUYS THREE SELF-DUMPING AND SPREADING 3 CUB. YARD ACME TRACTION HAUL WAGONS ONLY BEEN USED 3 MONTHS. FIRST CLASS CONDITION. LEESBURG LIME CO., INC., LEESBURG, VA.

FOR SALE—New No. 3 Newago Separator, style H. Write promptly. Address F. W. T. Co., care ROCK PRODUCTS AND BUILDING MATERIALS.

Slightly Used Machinery for Sale. One 7x12 Mundy D. C. S. D. Mine Hoisting Engine. One Nagle Portable Boiler, 40" Dia., 42 Tubes 3"x120". J. B. Blanton Co., Frankfort, Ky.

FOR SALE—18" Bonnot pulverizer practically as good as new. Operated only about three weeks. Address United States Glass Co., Tiffin, Ohio.

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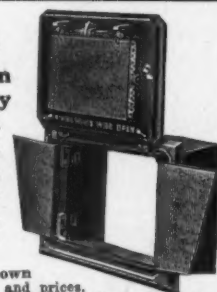
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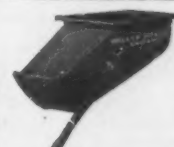


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ROCK PRODUCTS AND
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JULY 7, 1916

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Whitehall Portland Cement Mfg. Co.
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Calvert Mortar Color Wks.
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Williams, C. K., & Co.

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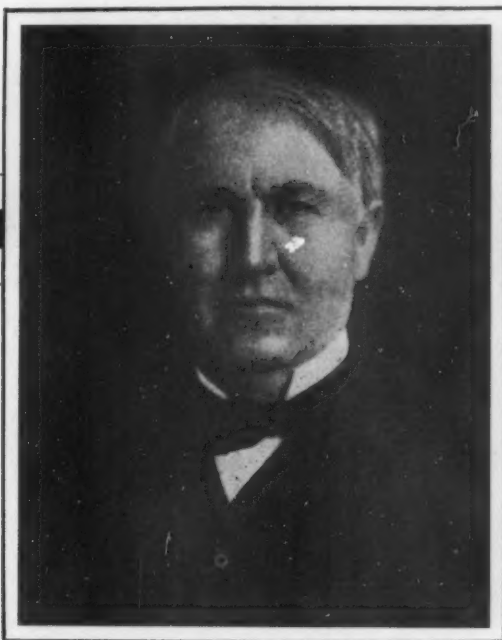
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Edison, the Cement Manufacturer

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Edison Portland Cement

is in every respect Thomas A. Edison's own product. He invented the giant rolls, so large and powerful that huge blocks of stone weighing eight tons can be crushed in them. He planned the first rotary kiln 150 feet long, in which the material is burned—kilns so successful that this type has since been adopted by practically all Portland cement manufacturers.

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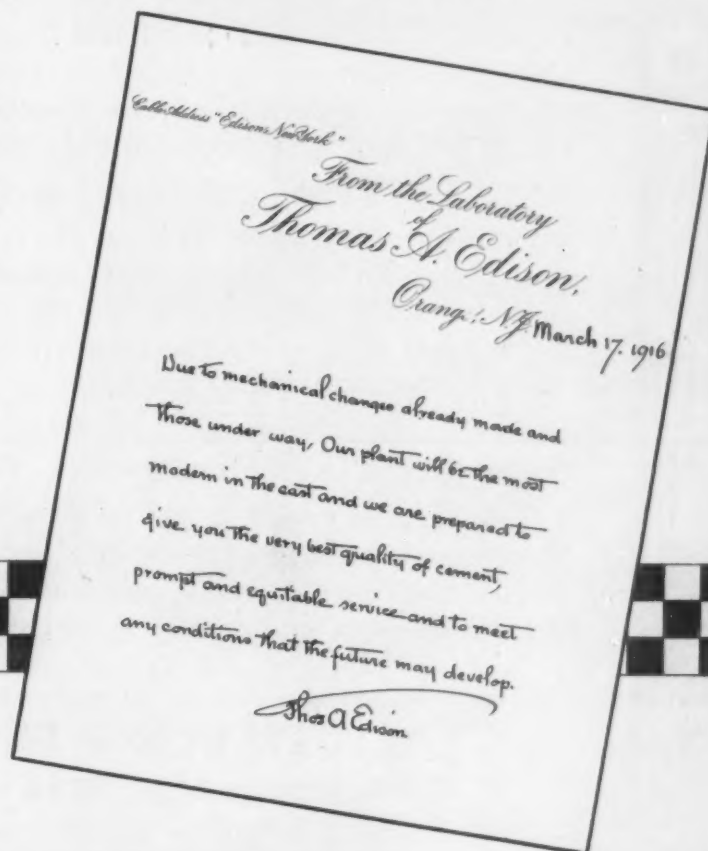
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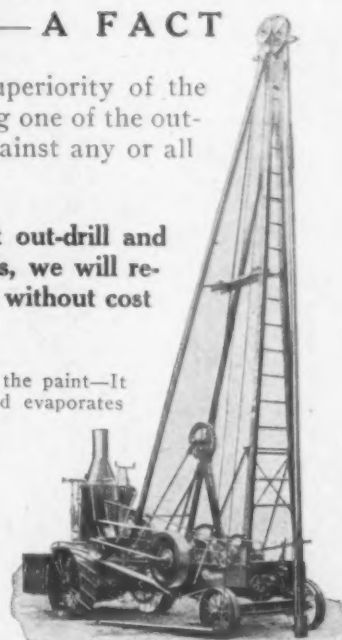
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